DOCUMENT RESUME

ED 141 103 SE 022 578

TITLE	The 4M ccmpAny: Make Mine Metric Mob. Fourth Grade Student Booklet.
INSTITUTION	Hawaii State Dept. of Education, Honolulu.; Hawaii Univ., Honolulu. Coll. of Education.
PUB DATE	76
NOTE	84p.; For related documents, see SE 022 570-583
AVAILABLE FRCM	Metric Project, University of Hawaii, 1776 University Ave., Honolulu, Hawaii 96822 ($1.00)
EDRS PRICE	MF-$0.83 HC-$4.67 Plus Postage.
DESCRIPTORS	Elementary Education; *Elementary School Mathematics; *Instructional Materials; *Mathematics Education; *Metric System; Workbooks

ABSTRACT

This student activity manual for elementary students is designed to teach several metric units. Included are activities related to temperature, length, vclume, and mass. In this manual, reading, adding, and subtracting decimals is stressed. Activities include a variety cf drill sheets. Cartoons are used extensively to appeal to student interests. (RH)

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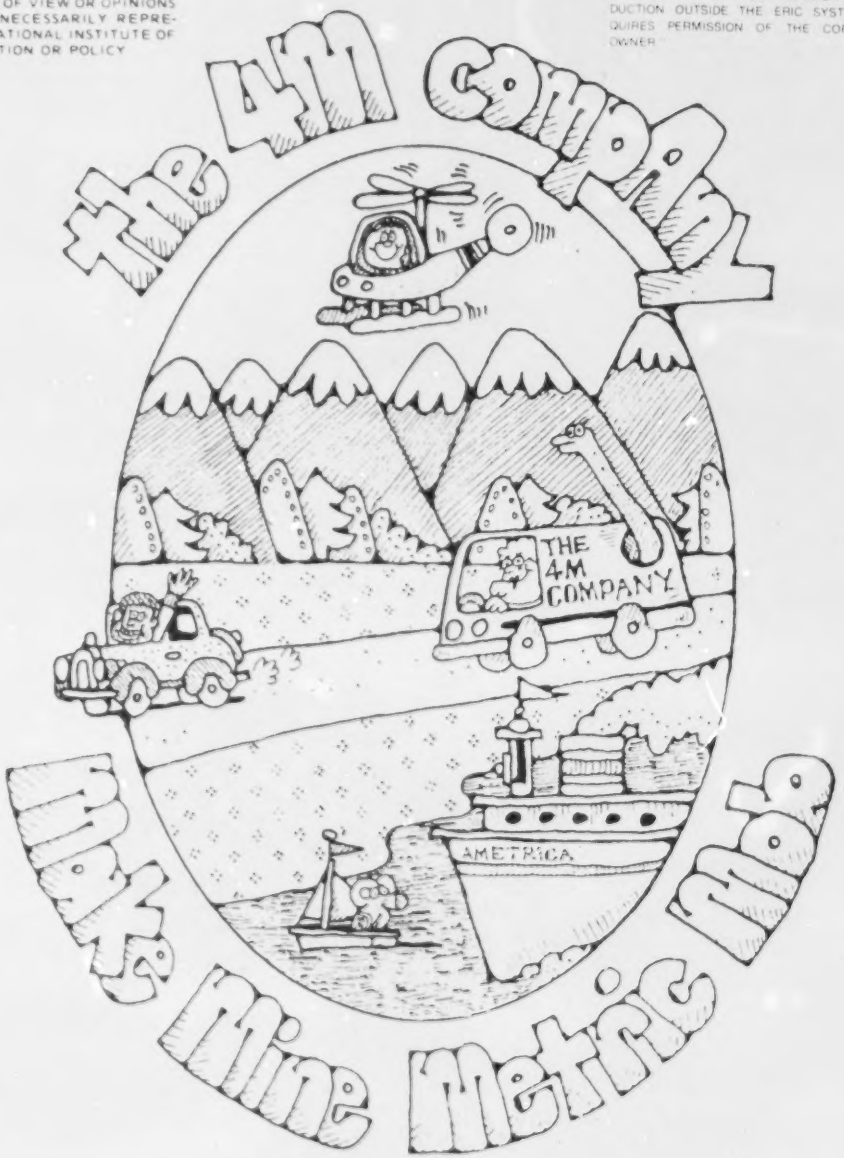

presents

the metric system

starring the

MOVE MOVE METRIC MOB

project staff:

Irv King, Director

Kathleen Berg, Curriculum Planner

Kini Haines, Artist

a cooperative effort of
the University of Hawaii
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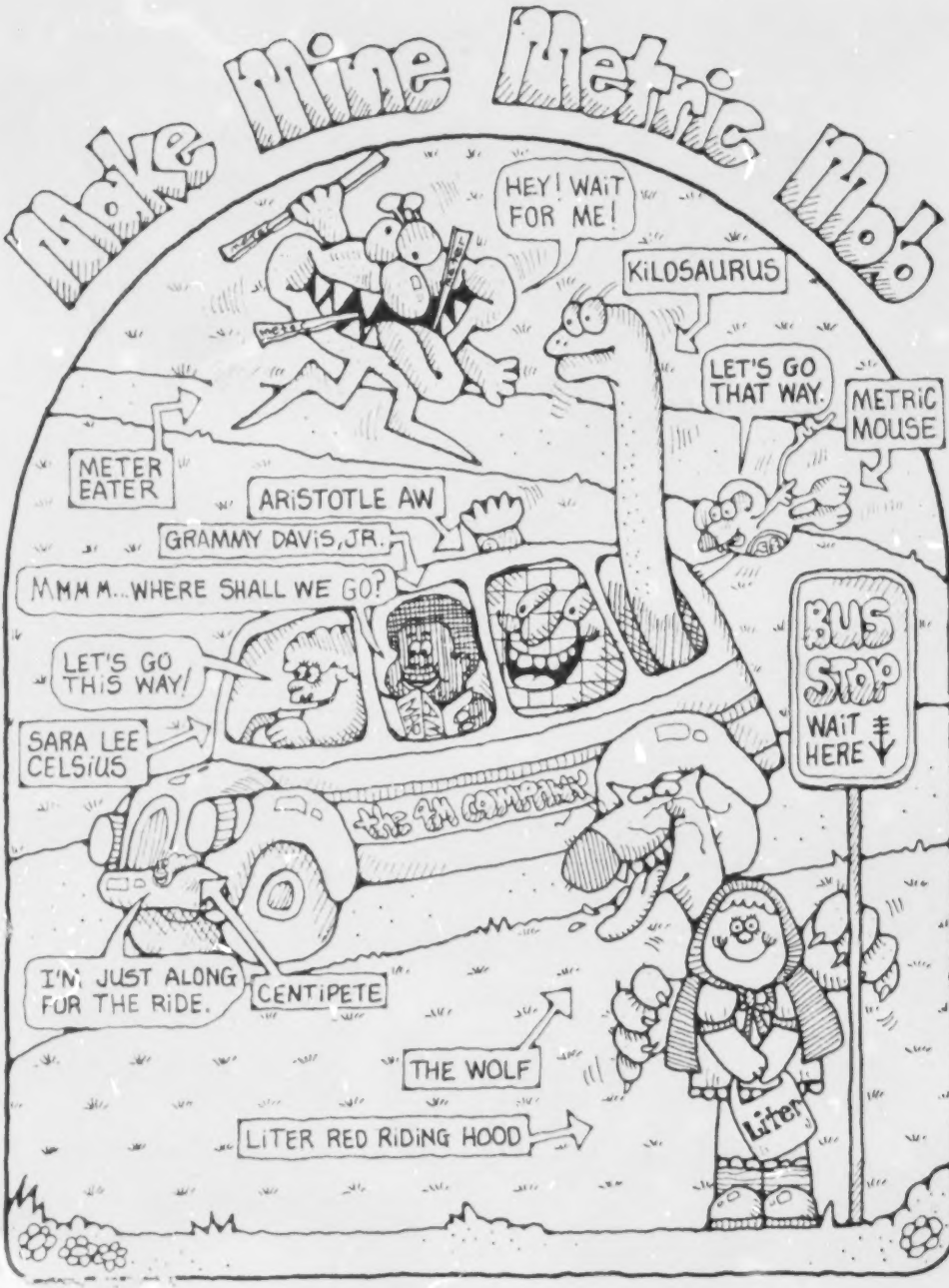
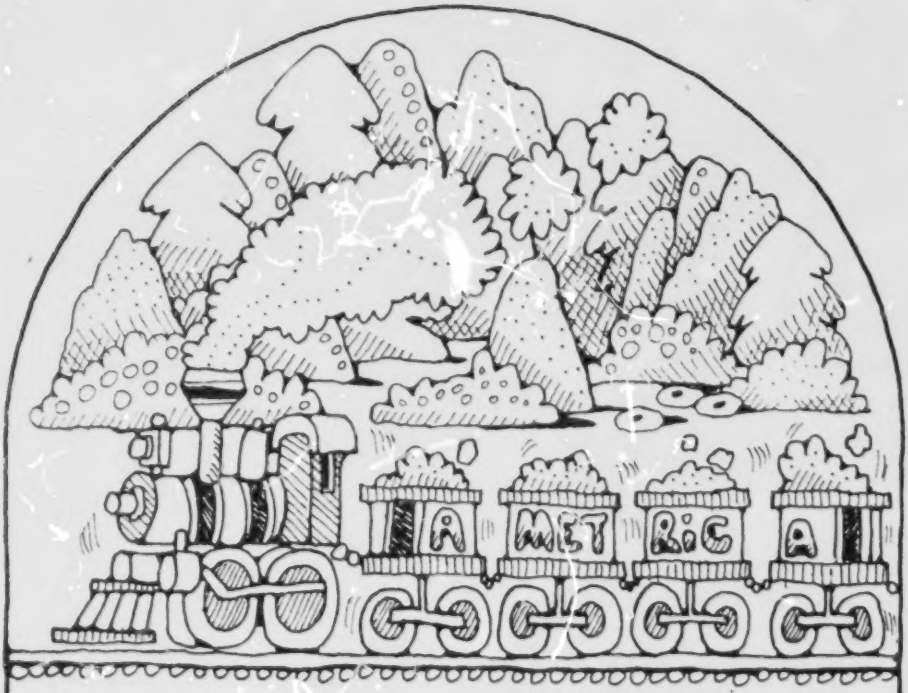
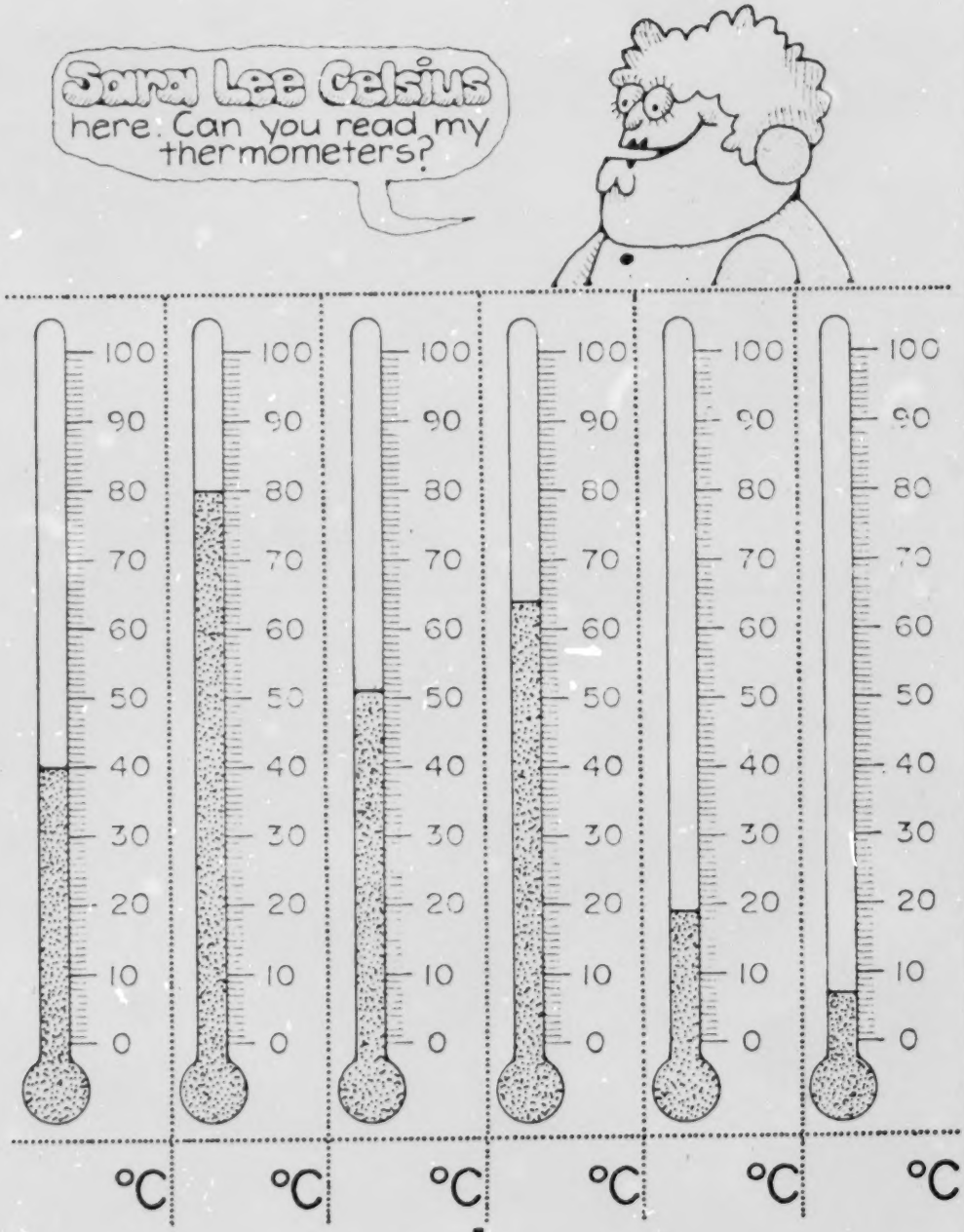

Make Mine Metric Mob
HEY! WAIT FOR ME!
KILOSAURUS
LET'S GO THAT WAY.
METRIC MOUSE
METER EATER
ARISTOTLE AW
GRAMMY DAVIS, JR.
MMMM...WHERE SHALL WE GO?
LET'S GO THIS WAY!
SARA LEE CELSIUS
BUS STOP WAIT HERE
I'M JUST ALONG FOR THE RIDE.
CENTIPETE
THE WOLF
LITER RED RIDING HOOD
Liter

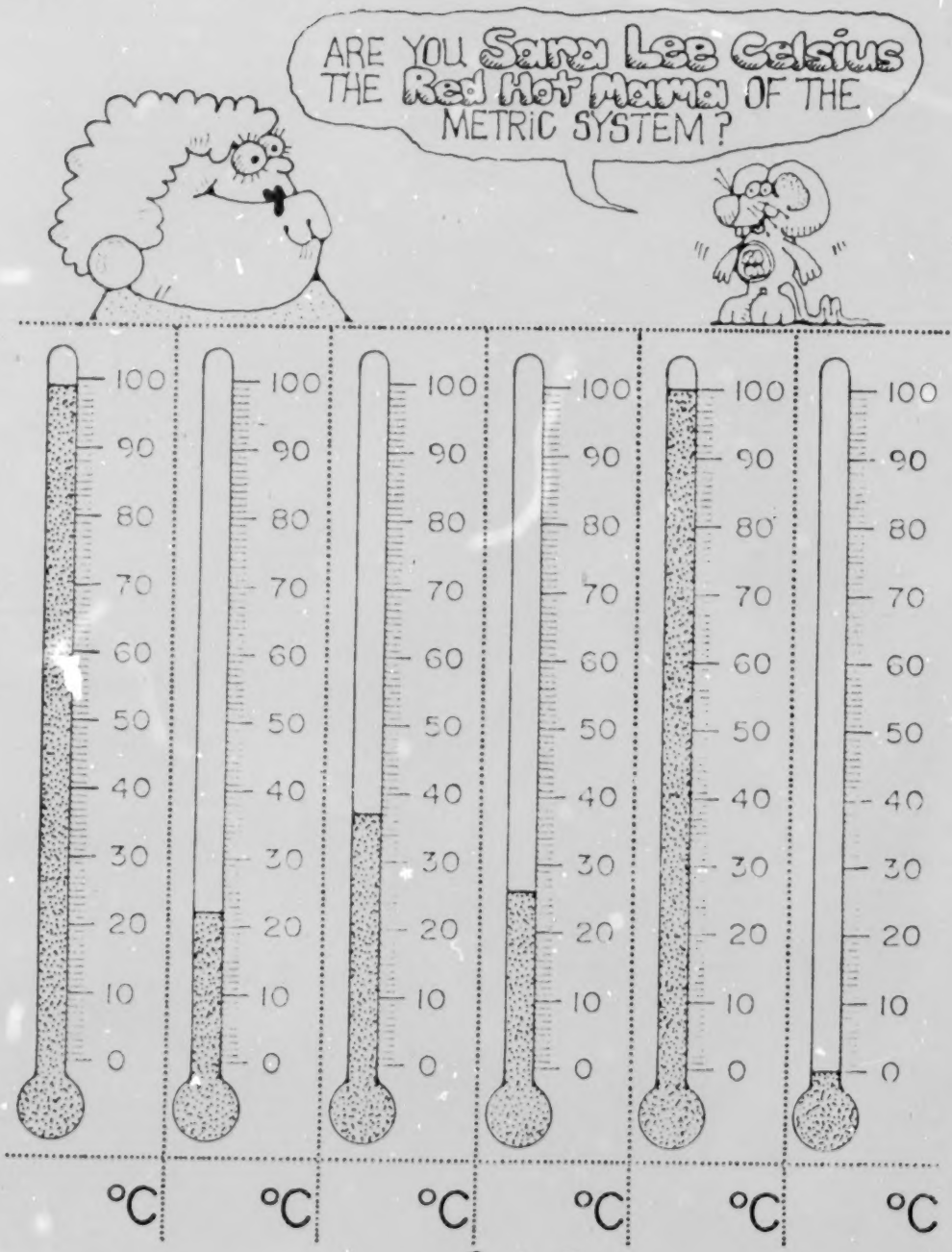


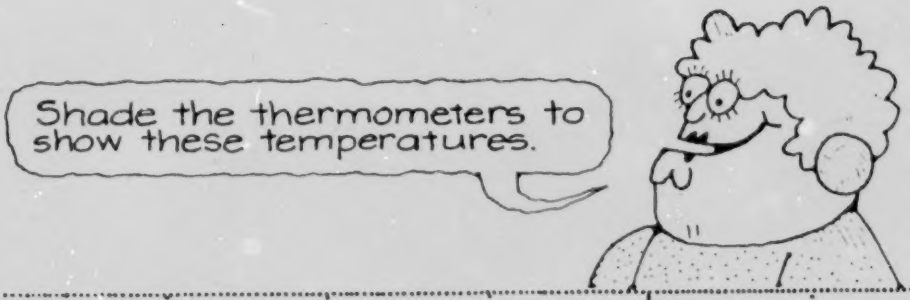
The Make Mine Metric Mob travels across Ametrica, teaching about the metric system of measurement. Members of the Mob are the fearless Meter Eater, Metric Mouse, Sara Lee Celsius, Liter Red Riding Hood and her wolf, Centipete, the Kilosaurus, Grammy Davis Jr., and Aristotle Aw. Join them as they travel the states from Kilorado to Alagrama, from New Metrico to Oregram. Pack your bags!

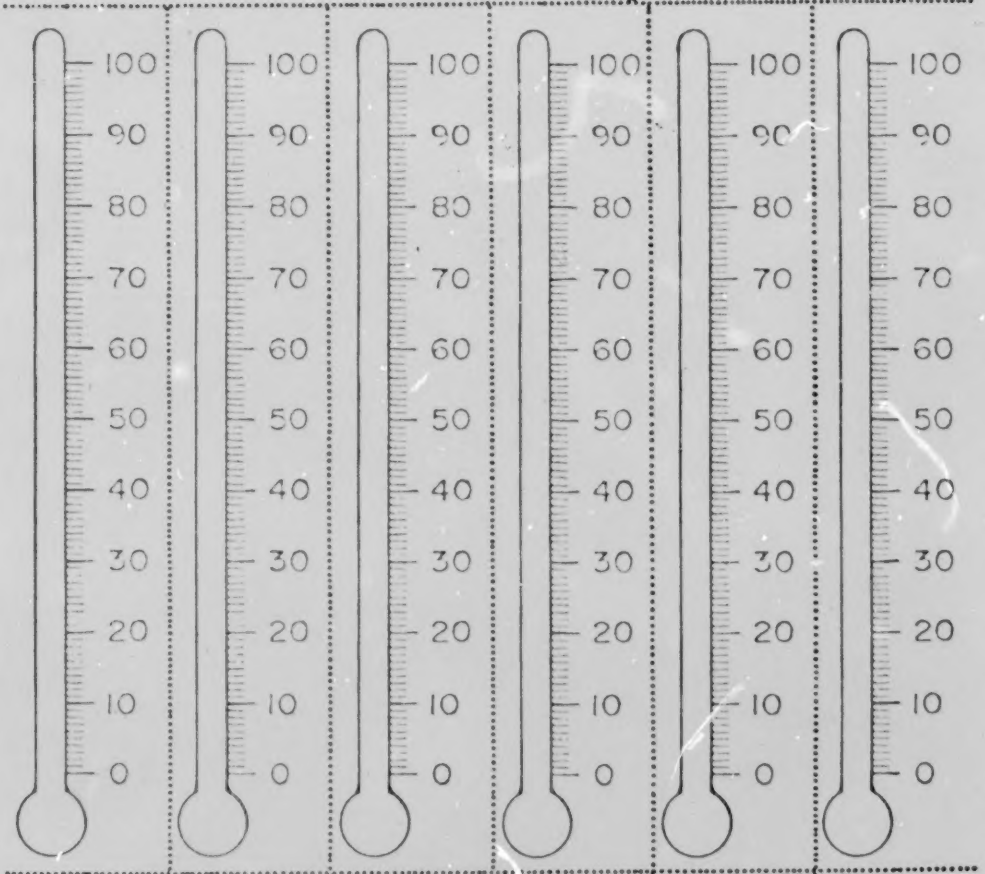
LET'S GO!

the 4M company

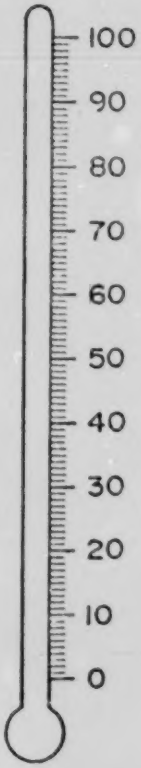

Sara Lee Celsius here. Can you read my thermometers?
100
90
80
70
60
50
40
30
20
10
0
°C


ARE YOU Sara Lee Celsius
THE Red Hot Mama OF THE
METRIC SYSTEM?
100
90
80
70
60
50
40
30
20
10
0
°C



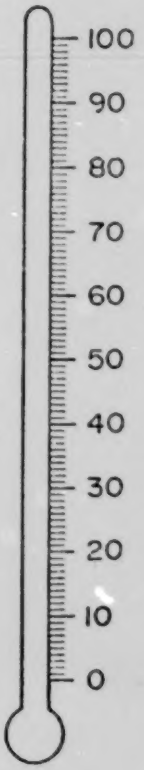


90 °C	14 °C	20 °C	37 °C	88 °C	100 °C



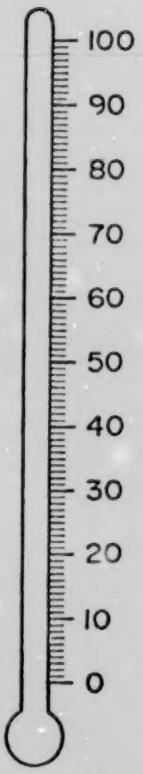
ice water

_____ °C



the sun

_____ °C



your hand

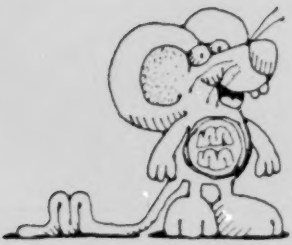
_____ °C

The meter is the basic unit of length in the metric system. Its symbol is m

Tape A is _____m long.

Tape B is _____m long.

The decimeter is one-tenth of a meter. This means that 10 decimeters make 1 meter. Its symbol is dm



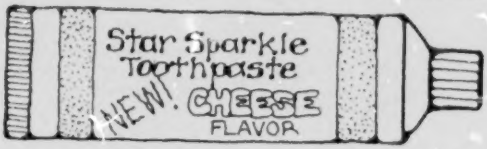
Line X is _____dm long.

Line Y is _____dm long.

The centimeter is one-hundredth of a meter. This means 100 centimeters make 1 meter. Its symbol is cm

My hand is _____cm wide.

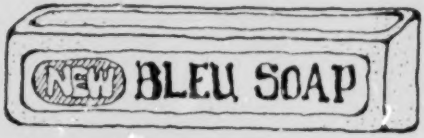
Metric Mouse here, packed and ready to travel. Guess how long my things are in centimeters. Then measure them.



_____ cm

_____

_____



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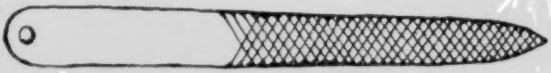
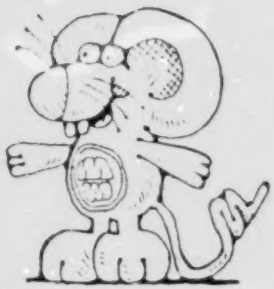
_____



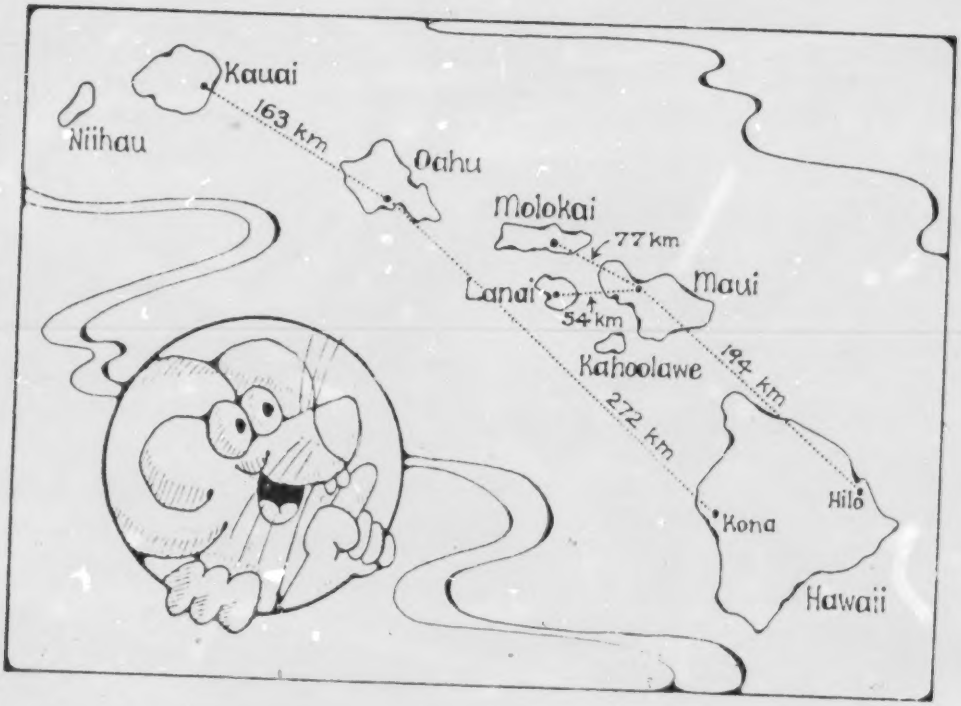
_____

Talk about this chart. Then copy it to make a chart of your own at the bottom of this page. Don't forget to write the symbols, *too!*

1000	kilometer (km)
100	hectometer (hm)
10	dekameter (dam)
1	meter (m)
0.1	decimeter (dm)
0.01	centimeter (cm)
0.001	millimeter (mm)



	( )
100	( )
	( )
	( )
0.1	( )
	( )
	( )



How far is it from...

Kauai to Oahu? _____km

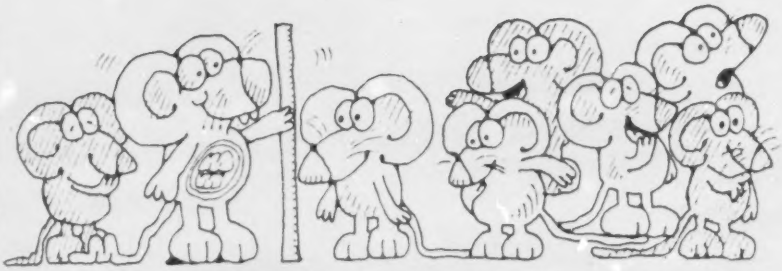
Hilo to Maui? _____km

Lanai to Maui? _____km

Oahu to Kona? _____km

Maui to Molokai? _____km

A	38 cm
E	38 dm
L	38 m
M	45 cm
N	45 dm
O	45 m
P	67 m
R	67 cm
S	67 dm
T	99 m
U	99 cm
Y	99 dm
I	29 cm
C	29 m
X	29 dm



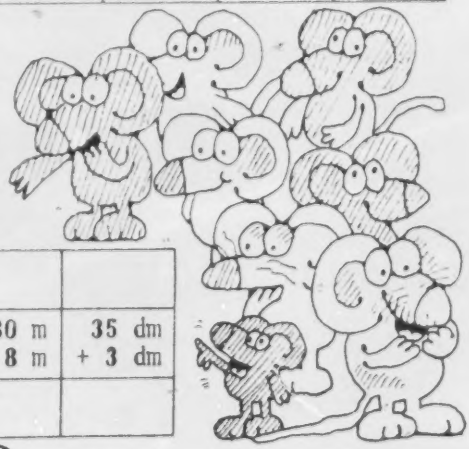
M					
23 cm +22 cm	18 dm +20 dm	90 m + 9 m	62 cm + 5 cm	16 cm +13 cm	15 m +14 m
45cm					

Secret Code

20 cm +25 cm	12 m +33 m	41 cm +58 cm	60 dm + 7 dm	20 dm +18 dm

17 cm +28 cm	10 dm +28 dm	19 cm +19 cm	20 dm +47 dm	23 cm +76 cm	21 cm +46 cm	5 dm +33 dm	34 dm +33 dm

10 cm +35 cm	20 cm +18 cm	11 dm +34 dm	11 dm +88 dm

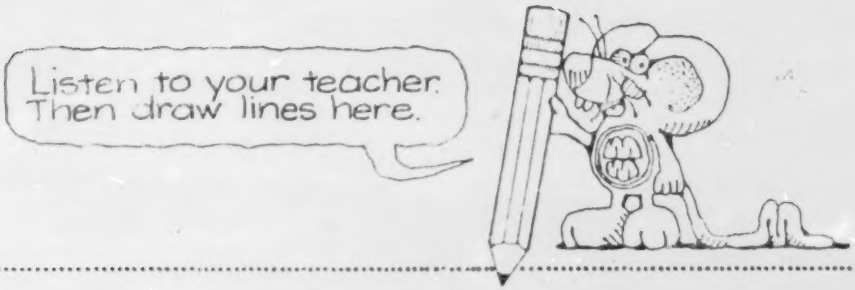


11 cm +34 cm	21 dm +17 dm	21 m +24 m	30 m +37 m	30 m + 8 m	35 dm + 3 dm

Listen to your teacher. Write the correct decimals here.

0.1m	0.2m	0.3m	0.4m	0.5m	0.6m	0.7m	0.8m	0.9m

1. ☐
2. ☐
3. ☐
4. ☐
5. ☐
6. ☐
7. ☐
8. ☐



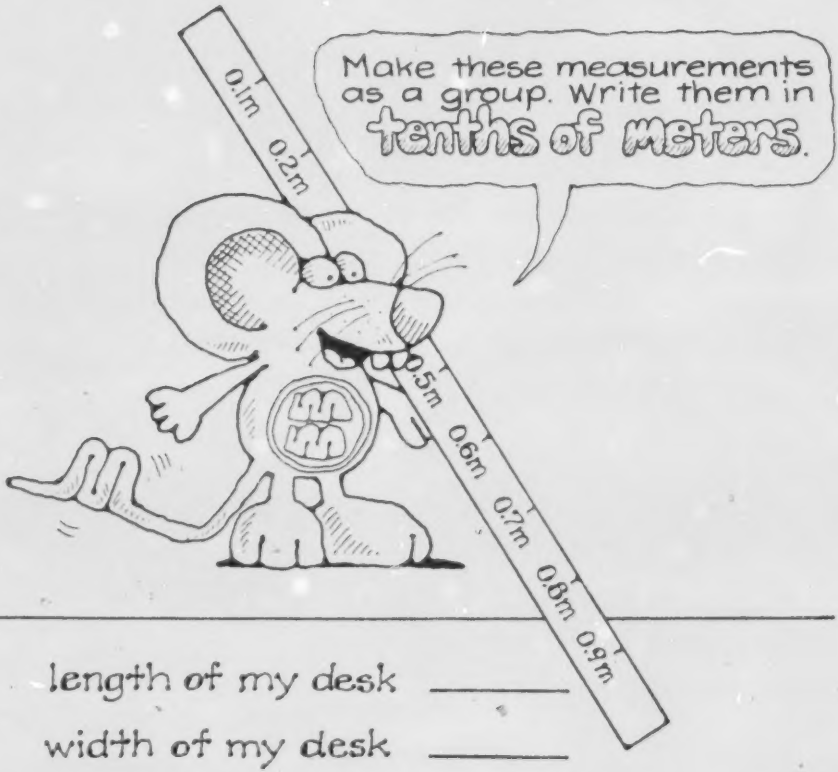
1. 0.1m 0.2m 0.3m 0.4m 0.5m 0.6m 0.7m 0.8m 0.9m

2. 0.1m 0.2m 0.3m 0.4m 0.5m 0.6m 0.7m 0.8m 0.9m

3. 0.1m 0.2m 0.3m 0.4m 0.5m 0.6m 0.7m 0.8m 0.9m

4. 0.1m 0.2m 0.3m 0.4m 0.5m 0.6m 0.7m 0.8m 0.9m

5. 0.1m 0.2m 0.3m 0.4m 0.5m 0.6m 0.7m 0.8m 0.9m



length of my desk _____

width of my desk _____

length of my metric booklet _____

width of my metric booklet _____

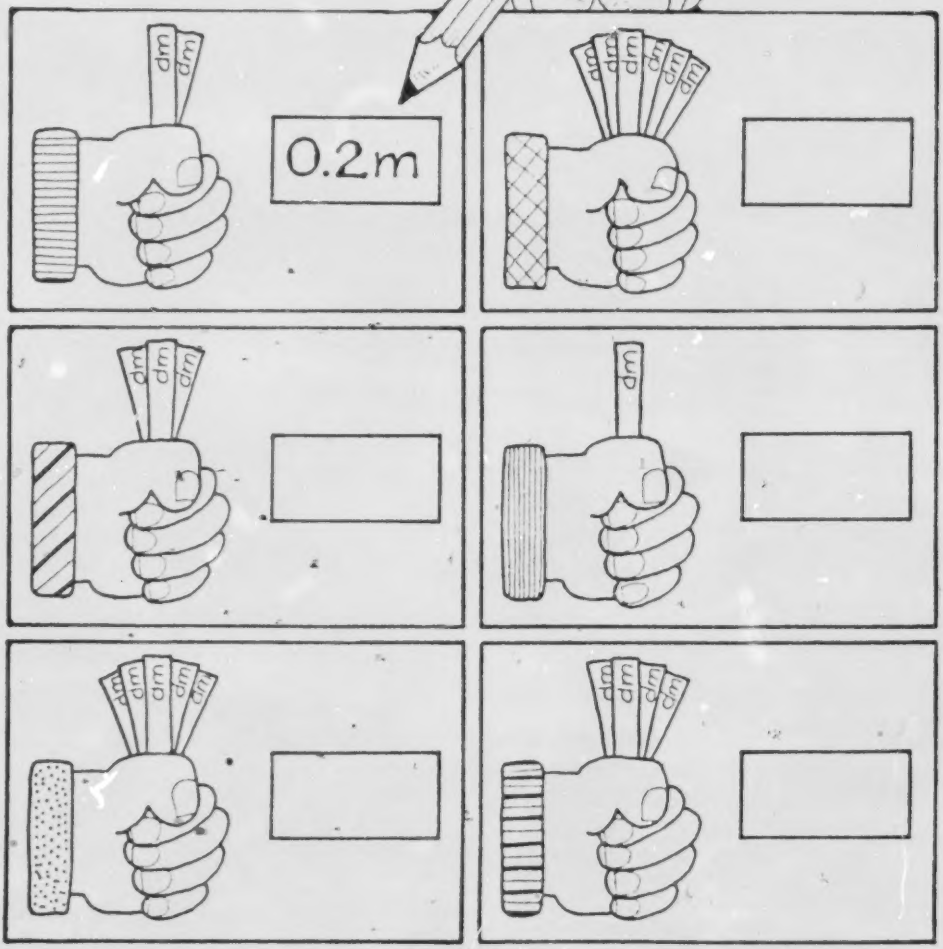
my waist _____

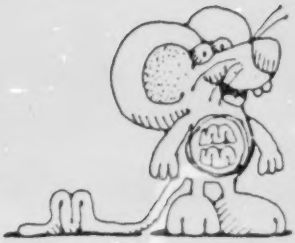
length of my foot _____

Since there are 10 decimeters in a meter, a decimeter is one tenth of a meter.

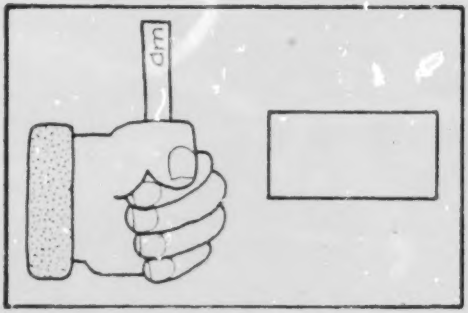
We write this as a decimal. 0.1 m

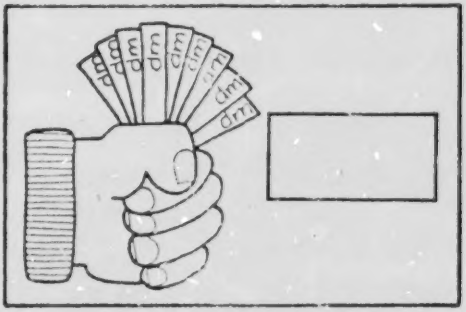
Now write decimals to show how long these would be placed end to end.

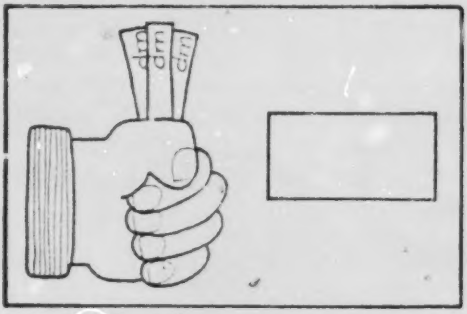


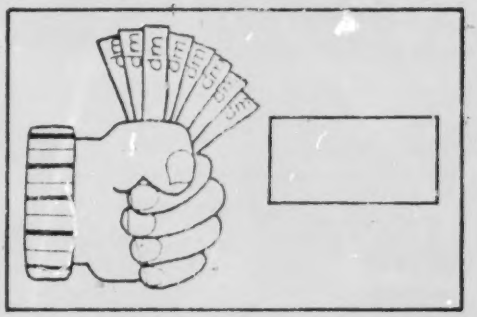


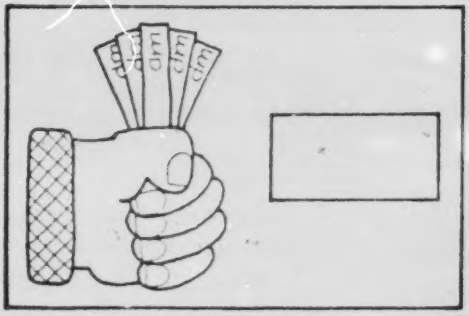
Write how long these would be placed end to end.

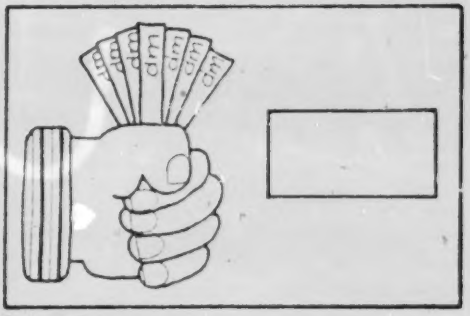












1. ☐ 6. ☐

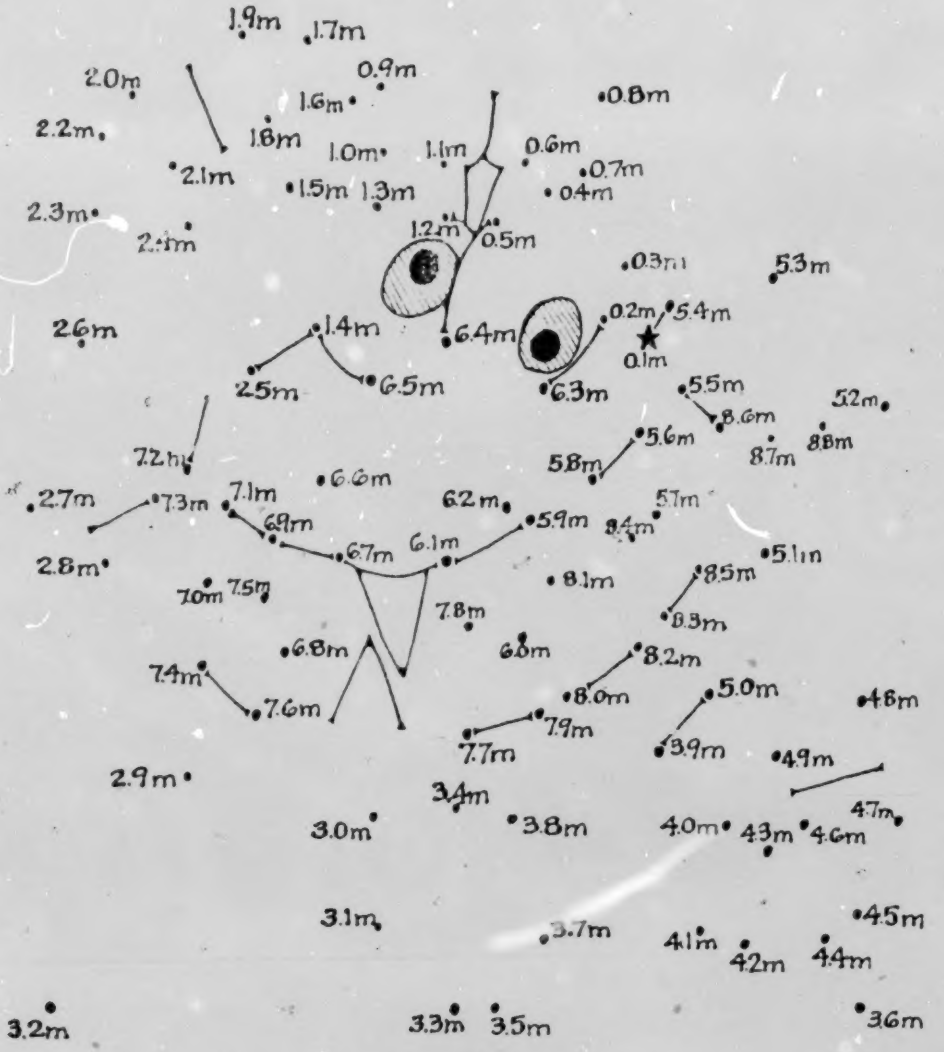
2. ☐ 7. ☐

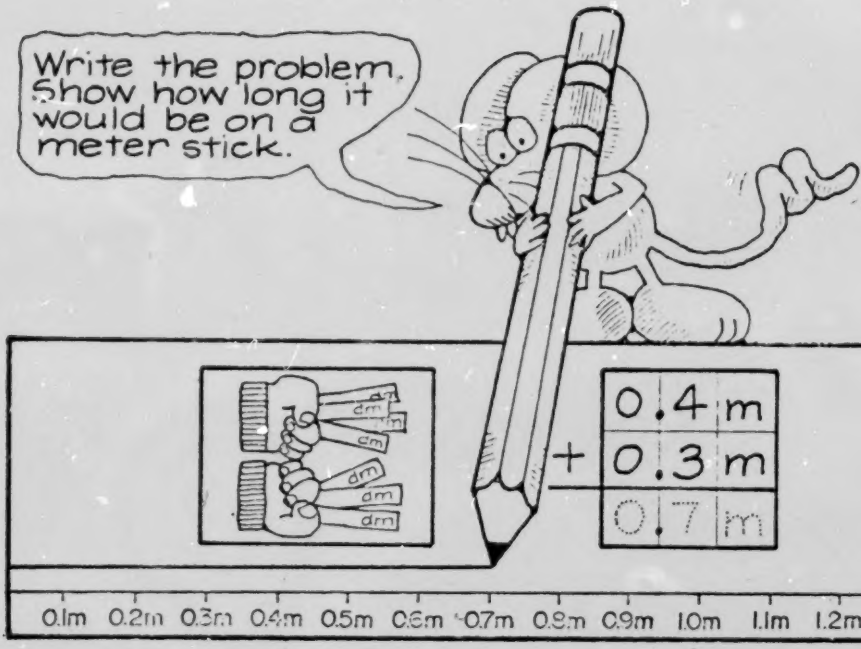
3. ☐ 8. ☐

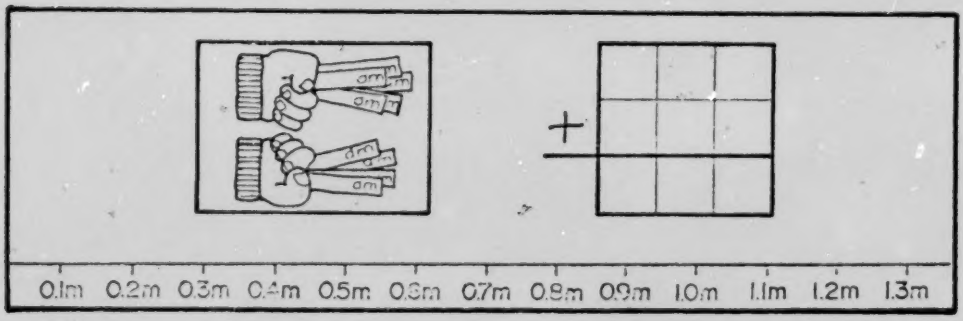
4. ☐ 9. ☐

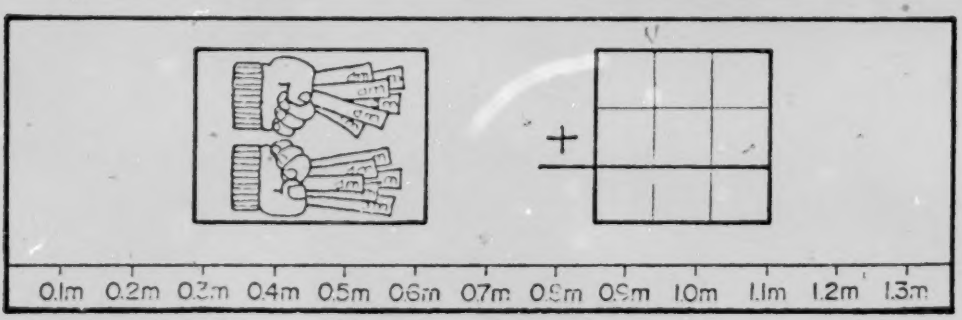
5. ☐ 10. ☐

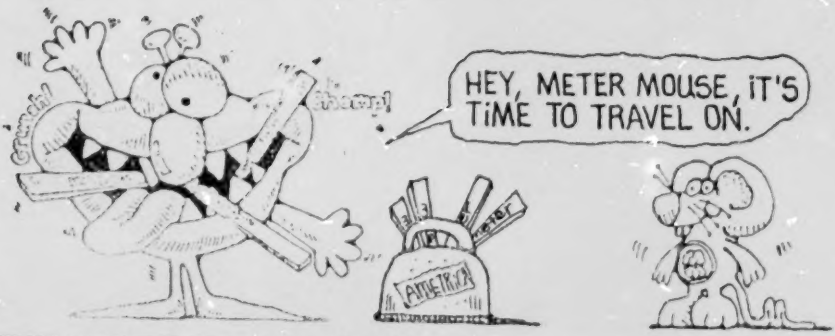
Connect the dots smallest to largest.
Start at the star. ★




Write the problem. Show how long it would be on a meter stick.
0.4 m
+ 0.3 m
0.7 m
0.1m 0.2m 0.3m 0.4m 0.5m 0.6m 0.7m 0.8m 0.9m 1.0m 1.1m 1.2m 1.3m


+
0.1m 0.2m 0.3m 0.4m 0.5m 0.6m 0.7m 0.8m 0.9m 1.0m 1.1m 1.2m 1.3m

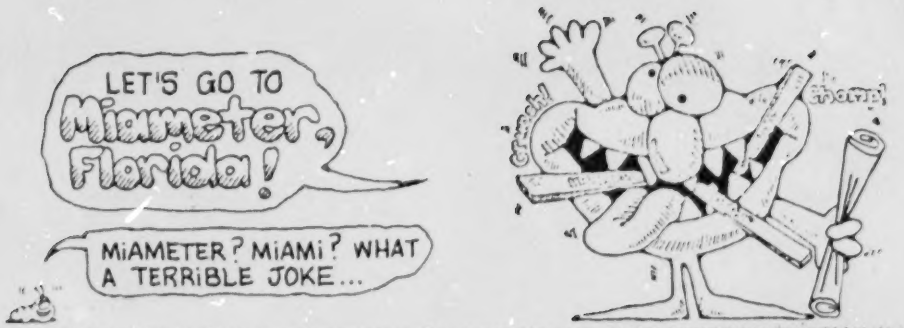

+
0.1m 0.2m 0.3m 0.4m 0.5m 0.6m 0.7m 0.8m 0.9m 1.0m 1.1m 1.2m 1.3m



0.3m +0.2m **0.5m**	0.3m +0.6m	0.7m +0.2m	0.3m +0.4m	0.2m +0.2m
0.6m +0.2m	0.5m +0.4m	0.3m +0.1m	0.8m +0.2m	0.7m +0.7m
0.5m +0.9m	0.4m +0.8m	0.9m +0.9m	0.8m +0.8m	0.6m +0.6m
0.5m +0.5m	1.3m +1.2m	1.6m +1.3m	1.2m +1.6m	1.4m +1.5m
2.1m +1.4m	1.6m +3.2m	4.3m +3.5m	2.7m +3.2m	1.4m +2.1m

1.6m + 1.8m = 3.4m	1.7m + 1.7m	1.9m + 1.3m	2.3m + 1.8m	2.7m + 1.4m
1.8m + 1.8m	2.9m + 0.4m	2.5m + 2.5m	2.3m + 0.9m	3.6m + 2.4m
2.2m + 3.8m	4.6m + 1.6m	3.5m + 3.5m	2.6m + 0.7m	3.8m + 4.9m
2.9m + 2.9m	4.5m + 4.5m	8.8m + 1.2m	5.5m + 4.5m	7.6m + 7.6m
6.8m + 3.3m	9.4m + 3.7m	4.6m + 8.5m	7.5m + 8.7m	3.3m + 6.8m

0.9 m −0.5 m 0.4 m	0.5 m −0.3 m	0.8 m −0.4 m	0.6 m −0.2 m	0.3 m −0.2 m
0.8 m −0.6 m	0.9 m −0.7 m	0.7 m −0.5 m	0.6 m −0.3 m	0.9 m −0.2 m
0.8 m −0.5 m	0.7 m −0.4 m	2.6 m −1.3 m	2.3 m −1.1 m	3.4 m −2.1 m
1.4 m −0.2 m	1.9 m −1.1 m	3.5 m −2.5 m	1.7 m −0.4 m	4.4 m −0.2 m
4.8 m −3.6 m	5.9 m −2.7 m	6.6 m −3.3 m	9.8 m −5.4 m	3.6 m −2.4 m



2.3m −0.6m 1.7m	2.2m −0.7m	2.0m −0.9m	2.6m −0.8m	3.5m −0.8m
3.2m −0.6m	4.8m −0.9m	4.1m −0.3m	3.3m −1.7m	3.0m −1.9m
3.1m −1.5m	3.2m −1.4m	3.5m −1.6m	1.5m −0.6m	4.2m −1.5m
5.1m −2.8m	1.2m −0.8m	6.2m −4.3m	7.0m −3.5m	1.1m −0.9m
8.1m −7.2m	1.6m −0.7m	5.0m −2.5m	1.4m −0.8m	9.1m −8.9m

H	29.4 m
C	1.1 m
T	27.7 m
U	41.3 m
E	36.1 m
N	25.7 m
F	8.8 m

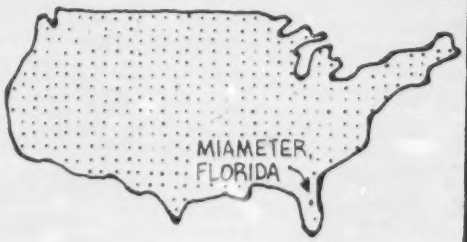
M	7.7 m
I	15.9 m
D	25.1 m
R	5.5 m
A	10.9 m
S	3.4 m
O	4.4 m

SECRET CODE

T		
21.3 m + 6.4 m	16.3 m +13.1 m	31.9 m + 4.2 m
27.7m		

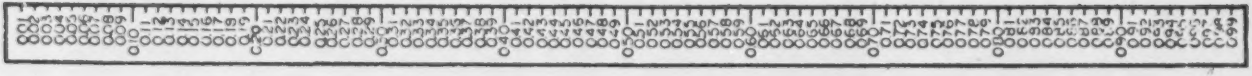
52.6 m -11.3 m	38.4 m -12.7 m	26.0 m -10.1 m	58.9 m -31.2 m	39.2 m - 3.1 m	50.5 m -25.4 m

1.7 m +1.7 m	14.3 m +13.4 m	6.8 m +4.1 m	7.2 m +20.5 m	18.8 m +17.3 m	1.2 m +2.2 m

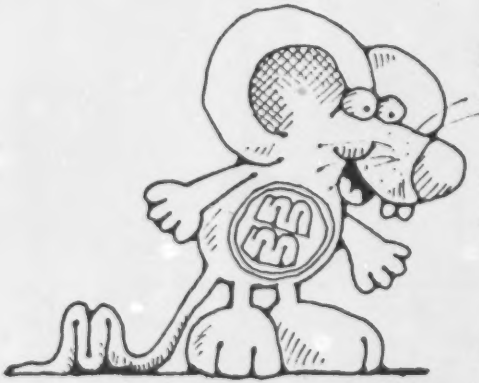


6.7 m -2.3 m	9.9 m -1.1 m

5.5 m +5.4 m	4.3 m +3.4 m	18.1 m +18.0 m	10.6 m +17.1 m	6.7 m -1.2 m	30.9 m -15.0 m	8.8 m -7.7 m	18.0 m - 7.1 m



Listen to your teacher. Write the correct decimals here.



1. ____ 5. ____

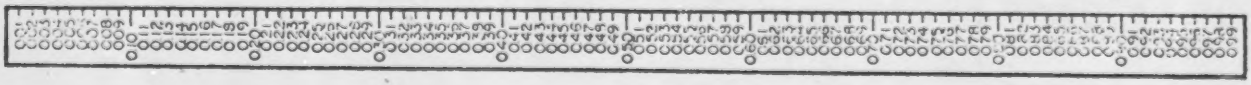
2. ____ 6. ____

3. ____ 7. ____

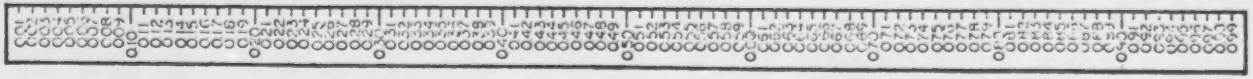
4. ____ 8. ____

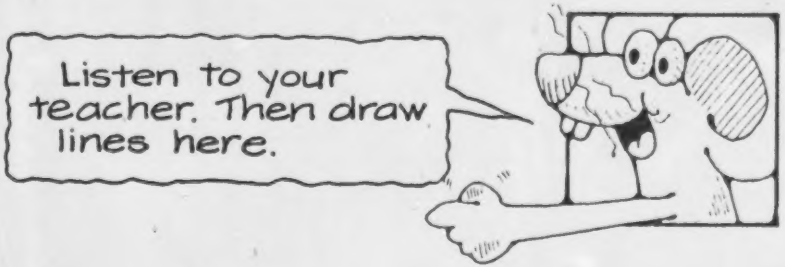
23

1



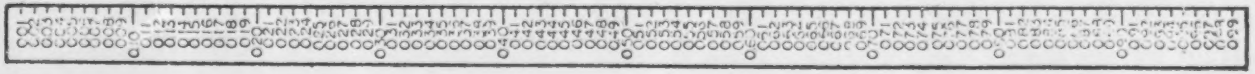
2





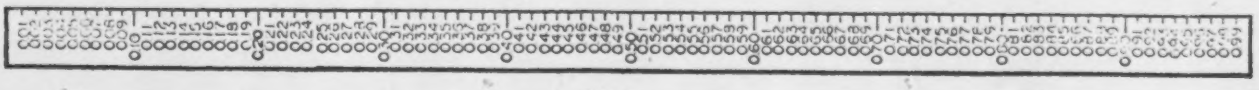
24

3



4

5



Cut out each strip. Tape together to make a meter.

	0.17 m-	0.34 m-	0.51 m-	0.68 m-	0.85 m-
0.01 m-	0.18 m-	0.35 m-	0.52 m-	0.69 m-	0.86 m-
0.02 m-	0.19 m-	0.36 m-	0.53 m-	0.70 m-	0.87 m-
0.03 m-	0.20 m-	0.37 m-	0.54 m-	0.71 m-	0.88 m-
0.04 m-	0.21 m-	0.38 m-	0.55 m-	0.72 m-	0.89 m-
0.05 m-	0.22 m-	0.39 m-	0.56 m-	0.73 m-	0.90 m-
0.06 m-	0.23 m-	0.40 m-	0.57 m-	0.74 m-	0.91 m-
0.07 m-	0.24 m-	0.41 m-	0.58 m-	0.75 m-	0.92 m-
0.08 m-	0.25 m-	0.42 m-	0.59 m-	0.76 m-	0.93 m-
0.09 m-	0.26 m-	0.43 m-	0.60 m-	0.77 m-	0.94 m-
0.10 m-	0.27 m-	0.44 m-	0.61 m-	0.78 m-	0.95 m-
0.11 m-	0.28 m-	0.45 m-	0.62 m-	0.79 m-	0.96 m-
0.12 m-	0.29 m-	0.46 m-	0.63 m-	0.80 m-	0.97 m-
0.13 m-	0.30 m-	0.47 m-	0.64 m-	0.81 m-	0.98 m-
0.14 m-	0.31 m-	0.48 m-	0.65 m-	0.82 m-	0.99 m-
0.15 m-	0.32 m-	0.49 m-	0.66 m-	0.83 m-	
0.16 m-	0.33 m-	0.50 m-	0.67 m-	0.84 m-	

length of my desk _____

width of my desk _____

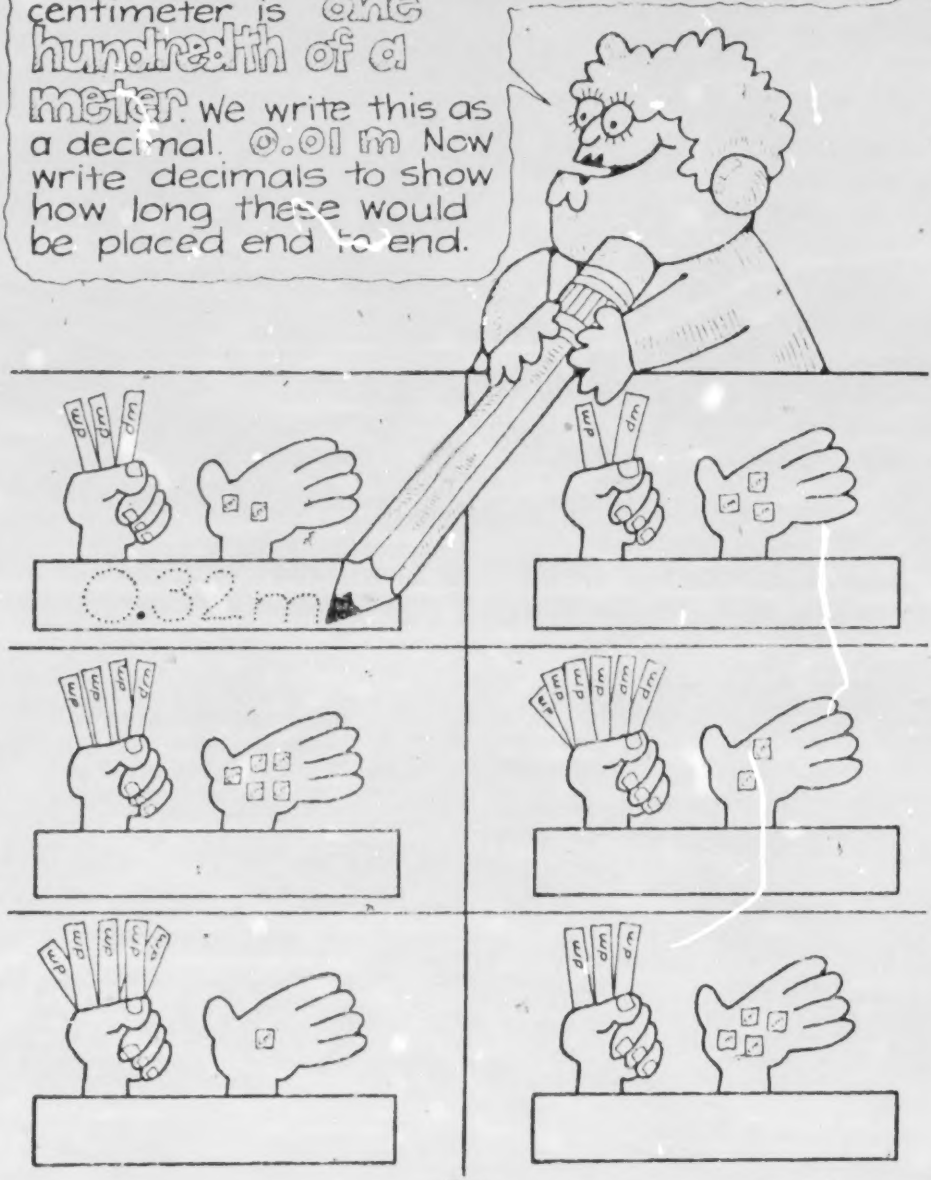
length of my metric booklet _____

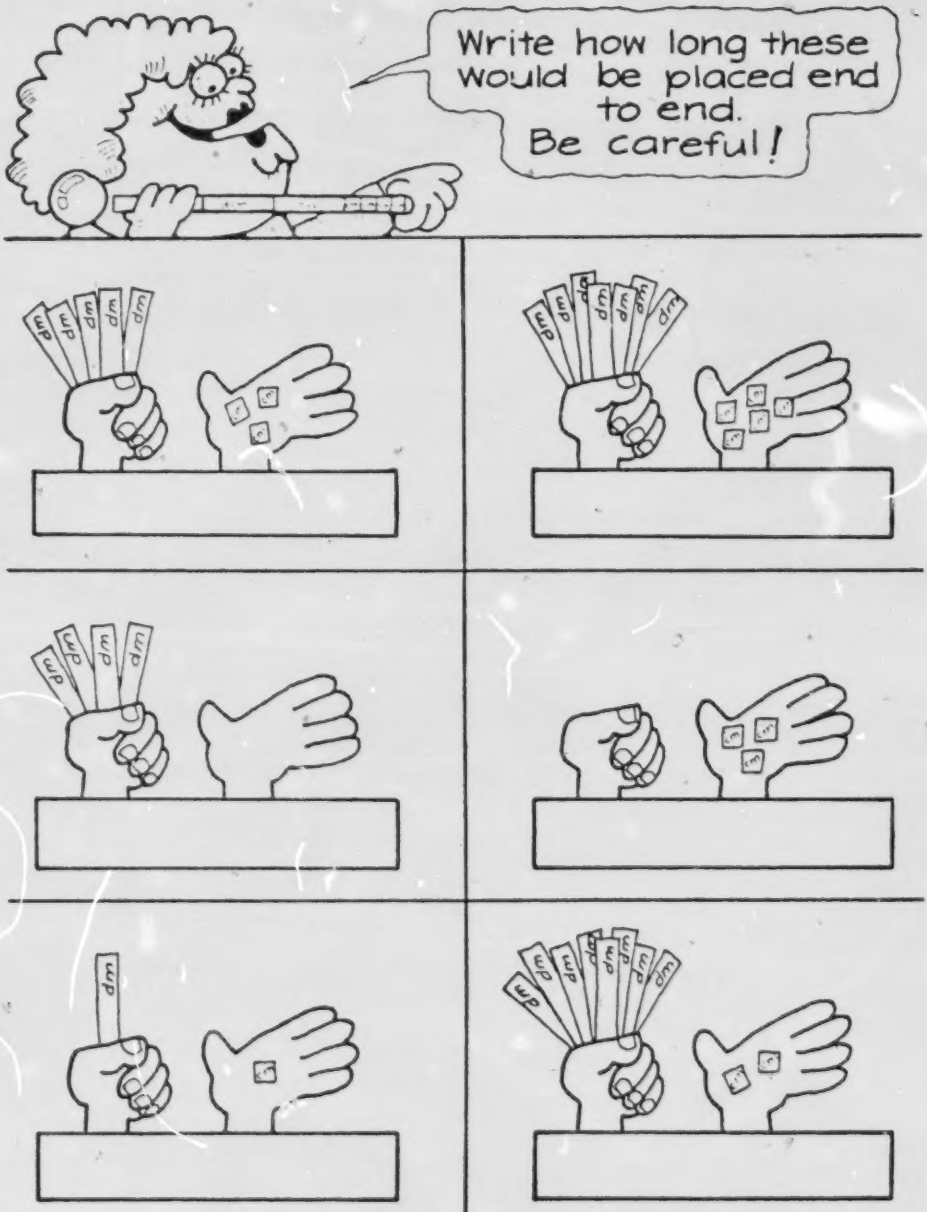
width of my metric booklet _____

my waist _____

length of my foot _____

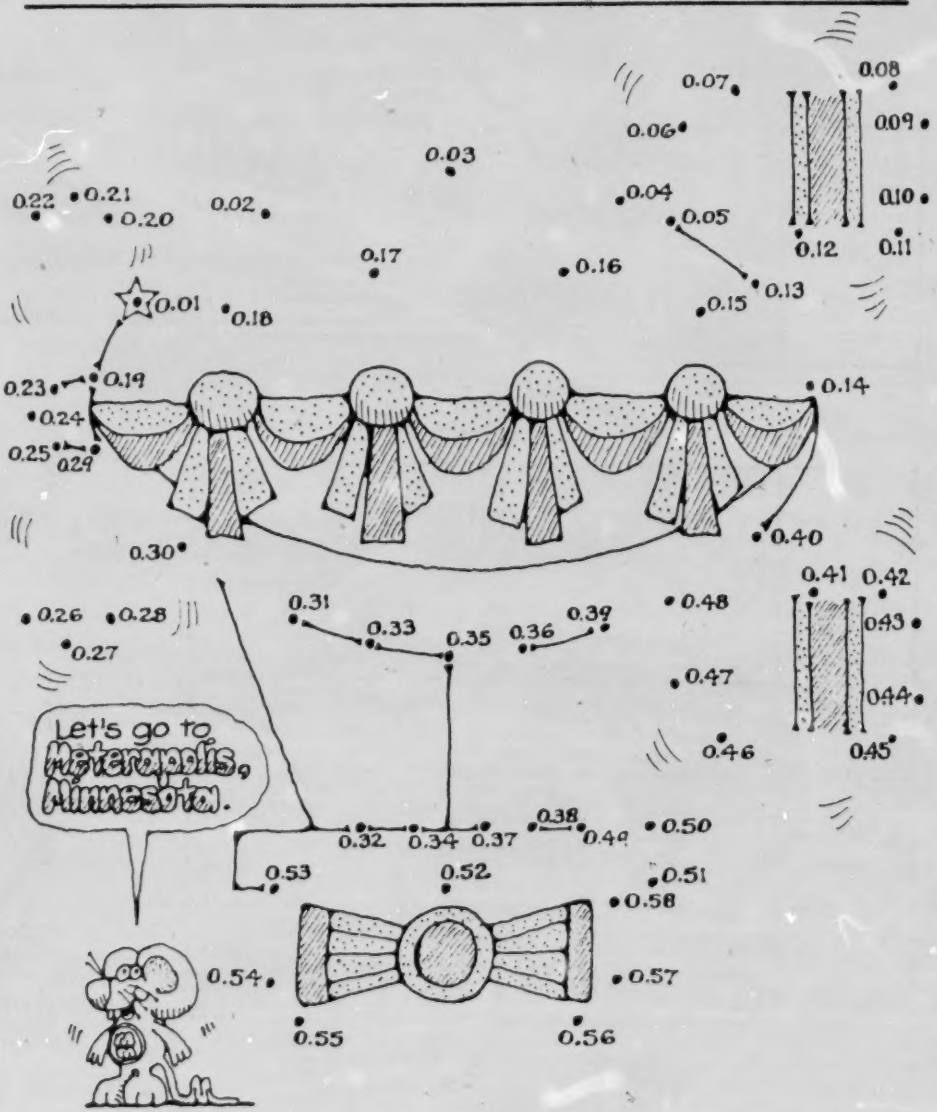
Since there are 100 centimeters in a meter, a centimeter is one hundredth of a meter. We write this as a decimal. 0.01 m Now write decimals to show how long these would be placed end to end.

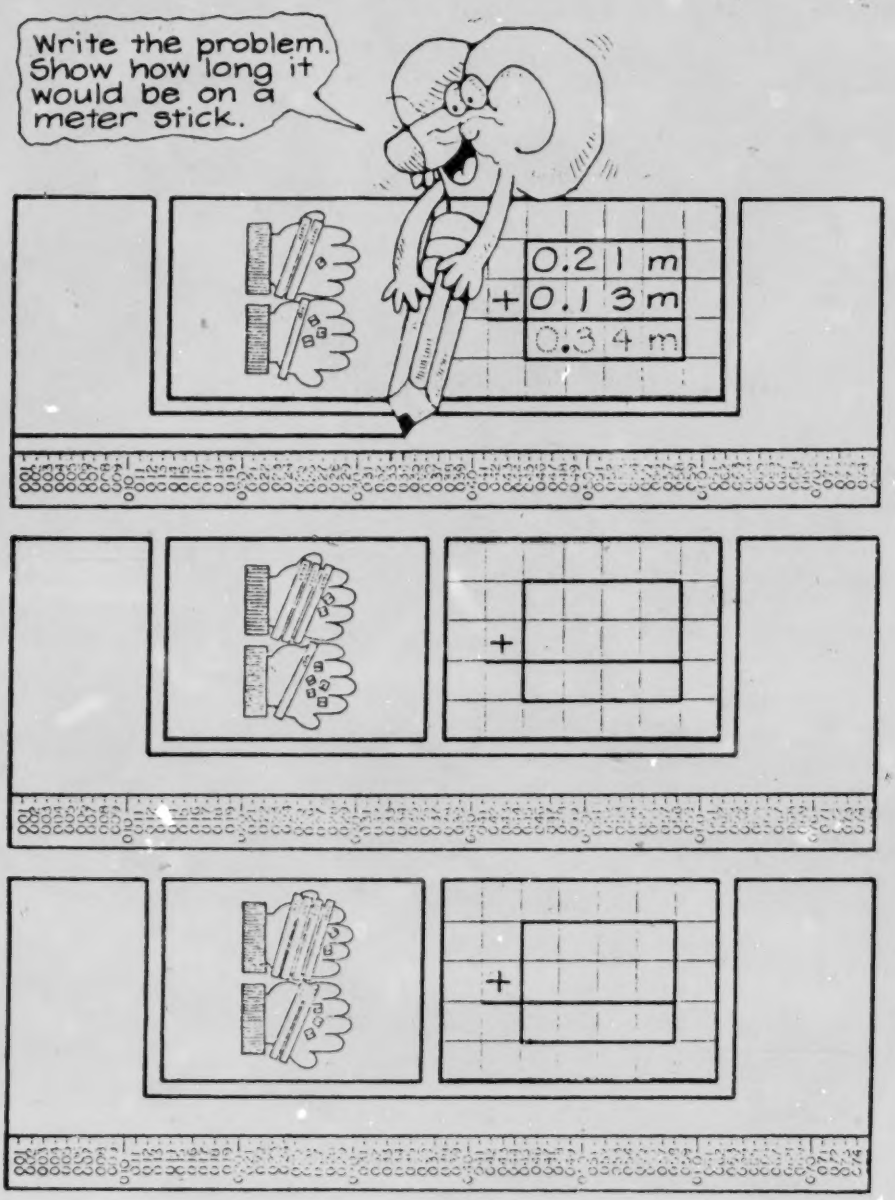


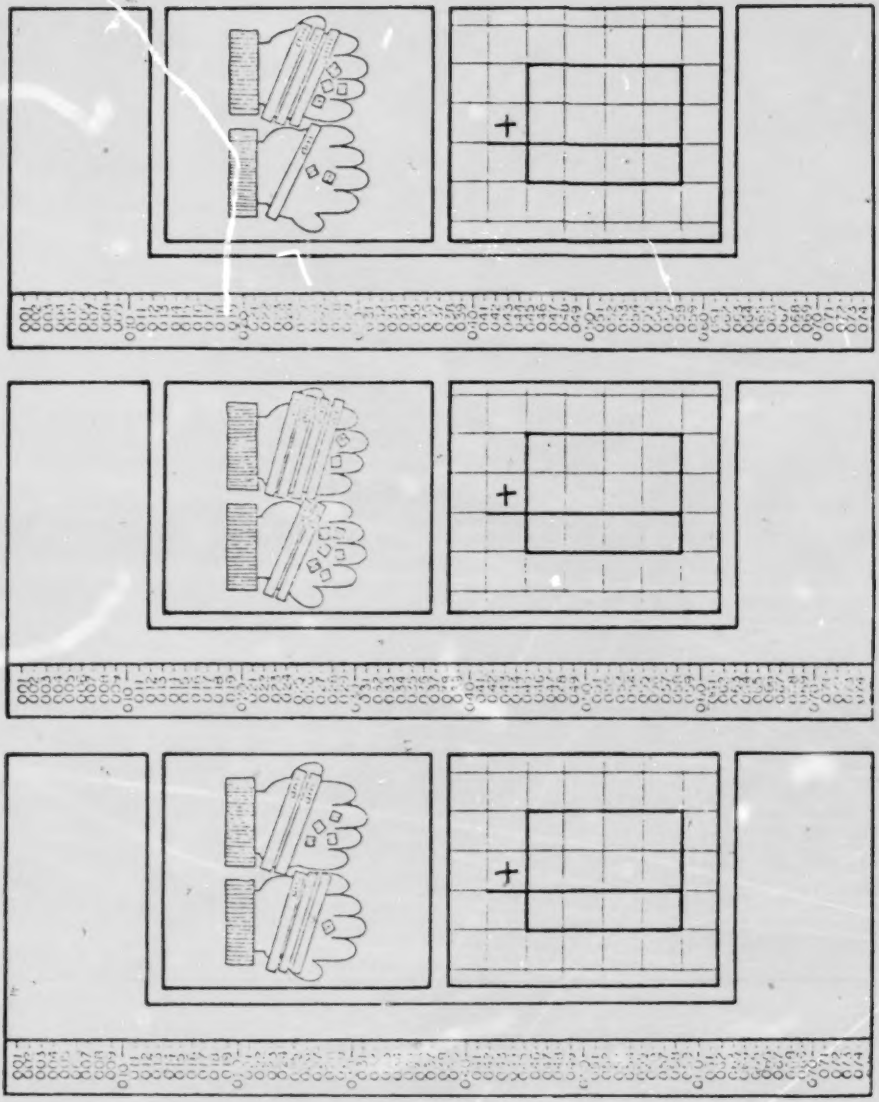

Write how long these would be placed end to end. Be careful!
cm
cm
cm
cm
cm
cm
cm
cm
cm
cm
cm
cm

1. ☐
2. ☐
3. ☐
4. ☐
5. ☐
6. ☐
7. ☐
8. ☐
9. ☐
10. ☐

Connect the dots smallest to largest.
Start at the star. ☆




Write the problem. Show how long it would be on a meter stick..
0.2 1 m
+ 0.1 3 m
0.3 4 m
+
+



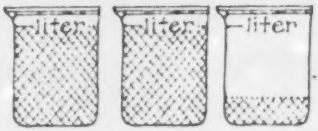
0.36m +0.21m	0.22m +0.44m	0.18m +0.51m	0.63m +0.25m	1.62m +1.35m
2.22m +3.33m	5.45m +4.54m	3.47m +5.12m	0.23m +2.15m	0.20m +0.08m
12.34m +12.34m	20.62m +13.25m	32.08m + 6.11m	43.21m + 0.53m	58.72m +10.26m
8.16m +0.22m	0.73m +7.04m	53.49m + 2.10m	32.50m +34.16m	74.32m +15.55m
304.66m +211.22m		432.89m +567.10m		105.46m +672.31m

1.86m +0.16m	1.74m +0.68m	1.92m +0.48m	0.57m +0.58m	2.37m +0.17m
1.46m +1.26m	3.04m +2.76m	0.33m +2.48m	1.62m +1.62m	2.73m +2.73m
0.94m +0.94m	4.81m +4.81m	5.25m +9.75m	362m +2.49m	1.50m +1.50m
2.50m +2.50m	350m +3.50m	4.50m +4.50m	0.65m +0.65m	1.73m +0.27m
24.37m +16.87m	12.50m +12.50m	25.25m +24.75m	12.83m + 8.28m	0.01m +0.99m

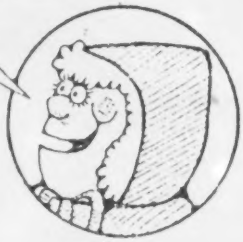
$\begin{array}{r} 0.08\,m \\ -0.05\,m \\ \hline \end{array}$	$\begin{array}{r} 0.07\,m \\ -0.02\,m \\ \hline \end{array}$	$\begin{array}{r} 0.06\,m \\ -0.03\,m \\ \hline \end{array}$	$\begin{array}{r} 0.09\,m \\ -0.04\,m \\ \hline \end{array}$	$\begin{array}{r} 0.25\,m \\ -0.13\,m \\ \hline \end{array}$
$\begin{array}{r} 0.18\,m \\ -0.05\,m \\ \hline \end{array}$	$\begin{array}{r} 0.16\,m \\ -0.04\,m \\ \hline \end{array}$	$\begin{array}{r} 0.28\,m \\ -0.14\,m \\ \hline \end{array}$	$\begin{array}{r} 1.54\,m \\ -0.23\,m \\ \hline \end{array}$	$\begin{array}{r} 2.89\,m \\ -1.45\,m \\ \hline \end{array}$
$\begin{array}{r} 8.88\,m \\ -3.33\,m \\ \hline \end{array}$	$\begin{array}{r} 7.31\,m \\ -4.00\,m \\ \hline \end{array}$	$\begin{array}{r} 8.06\,m \\ -7.03\,m \\ \hline \end{array}$	$\begin{array}{r} 0.16\,m \\ -0.06\,m \\ \hline \end{array}$	$\begin{array}{r} 5.39\,m \\ -0.23\,m \\ \hline \end{array}$
$\begin{array}{r} 4.52\,m \\ -1.50\,m \\ \hline \end{array}$	$\begin{array}{r} 62.49\,m \\ -51.38\,m \\ \hline \end{array}$	$\begin{array}{r} 75.46\,m \\ -53.24\,m \\ \hline \end{array}$	$\begin{array}{r} 854.79\,m \\ -521.46\,m \\ \hline \end{array}$	

2.35m 0.49m	1.36m −0.68m	2.42m −0.88m	3.33m −1.76m	1.04m −0.22m
2.06m −1.53m	3.40m −1.15m	1.60m −1.29m	2.02m −0.36m	1.06m −0.88m
3.04m −2.27m	1.08m −0.99m	4.00m −1.99m	3.15m −1.29m	1.00m −0.01m
26.83m −10.55m	2.84m −1.42m	50.50m −25.25m	46.25m −28.75m	50.00m −49.99m
10.15m −0.85m	43.11m −9.78m	60.01m −0.09m	104.30m −48.75m	526.38m −214.24m

The **liter** is the basic unit of liquid capacity in the metric system. It's symbol is *l*. Let's round these off to the nearest liter.

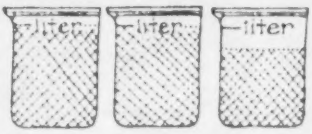


about 2 liters

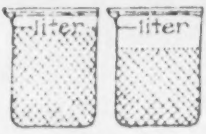


Rounding off:

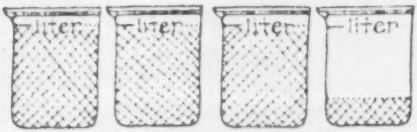
If less than $\frac{1}{2}$ liter, round down.
If $\frac{1}{2}$ liter or more, round up.



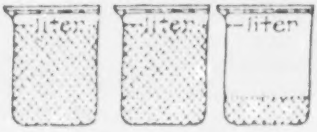
about ____ liters



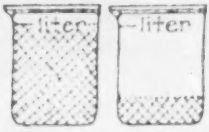
about ____ liters



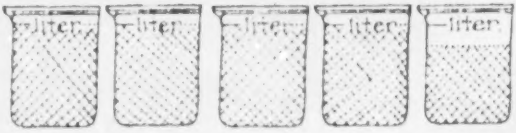
about ____ liters



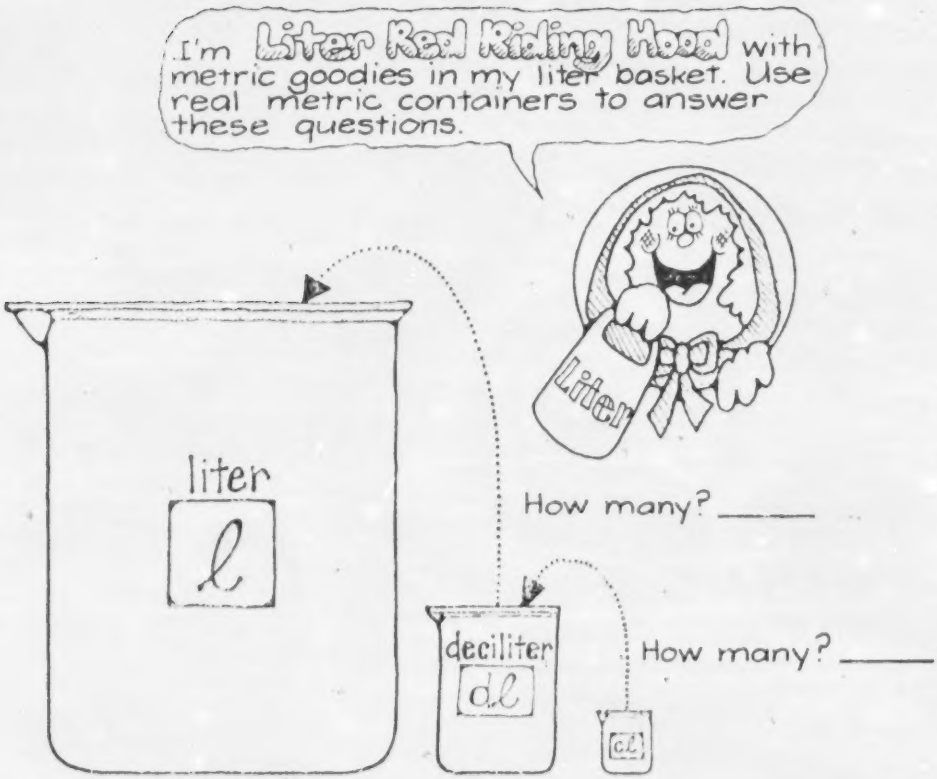
about ____ liters



about ____ liters



about ____ liters



_____ deciliters = 1 liter

_____ centiliters = 1 deciliter

_____ centiliters = 1 liter

Practice spelling the words liter, deciliter, and centiliter. Write each word in your note book six times.

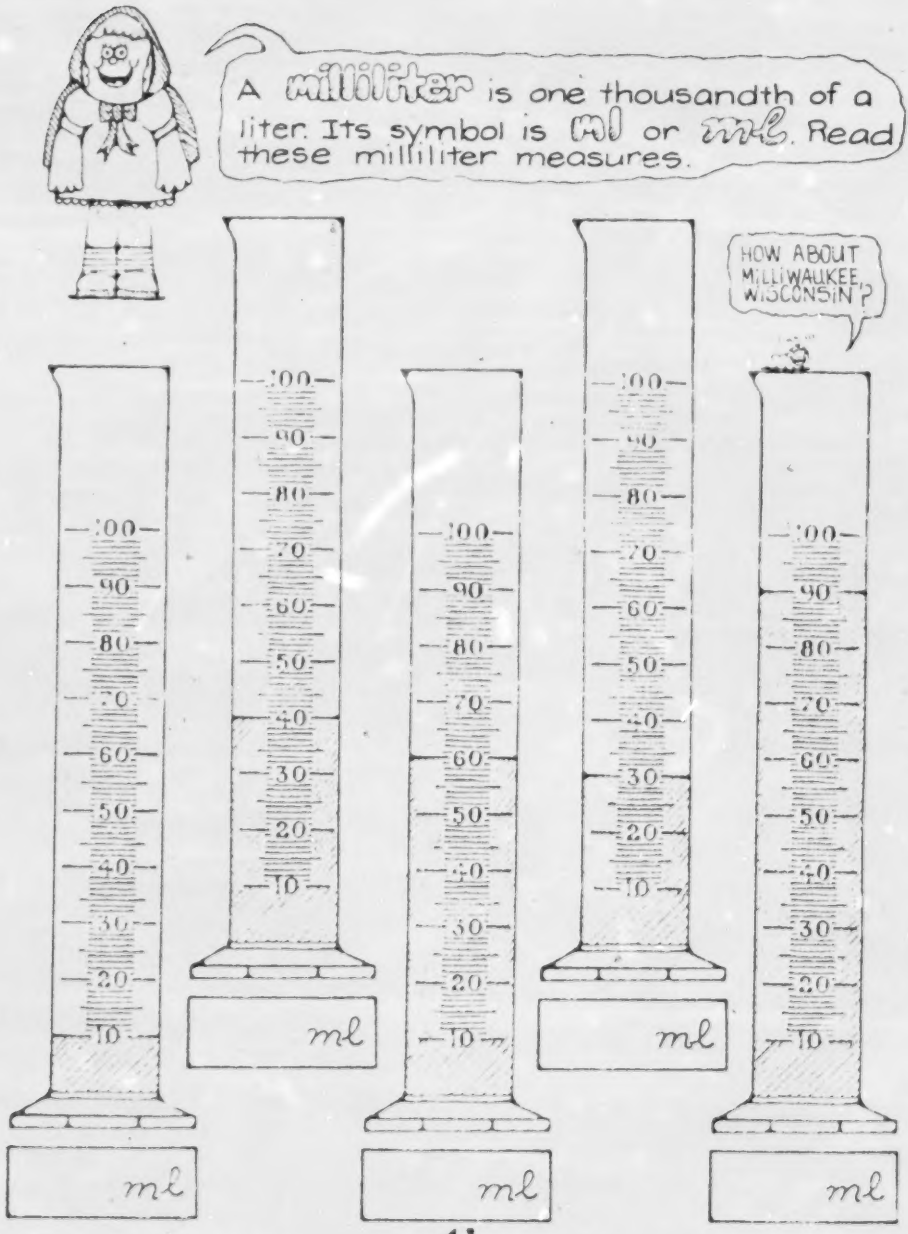
Fill each of these containers with water. Pour into deciliter containers. Write your answers here. Round off to the nearest deciliter.
We'll use these boxes later. Leave them empty for now.

about_____deciliters

about_____deciliters

about_____deciliters

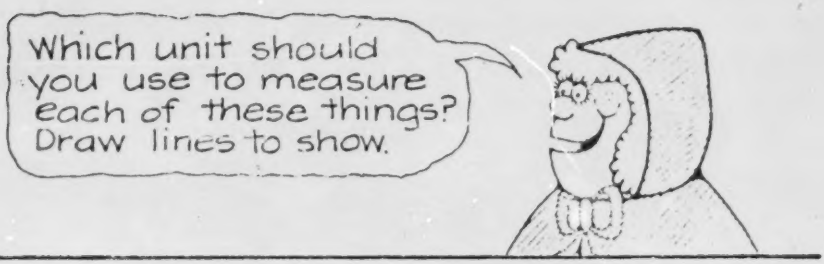
Remember how to round off?
If less than $\frac{1}{2}$ deciliter, round down.
If $\frac{1}{2}$ deciliter or more, round up.


A milliliter is one thousandth of a liter. Its symbol is ml or mL. Read these milliliter measures.
HOW ABOUT MILLIWAUKEE, WISCONSIN?
100
90
80
70
60
50
40
30
20
10
ml

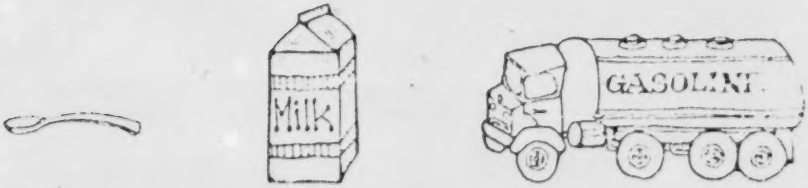
Talk about this chart. Then copy it to make a chart of your own at the bottom of this page. Don't forget to write the symbols, too!

1000	kiloliter (kl)
100	hectoliter (hl)
10	dekaliter (dal)
1	liter (l)
0.1	deciliter (dl)
0.01	centiliter (cl)
0.001	milliliter (ml)

	( )
100	( )
	( )
	( )
0.1	( )
	( )
	( )



kiloliter liter milliliter

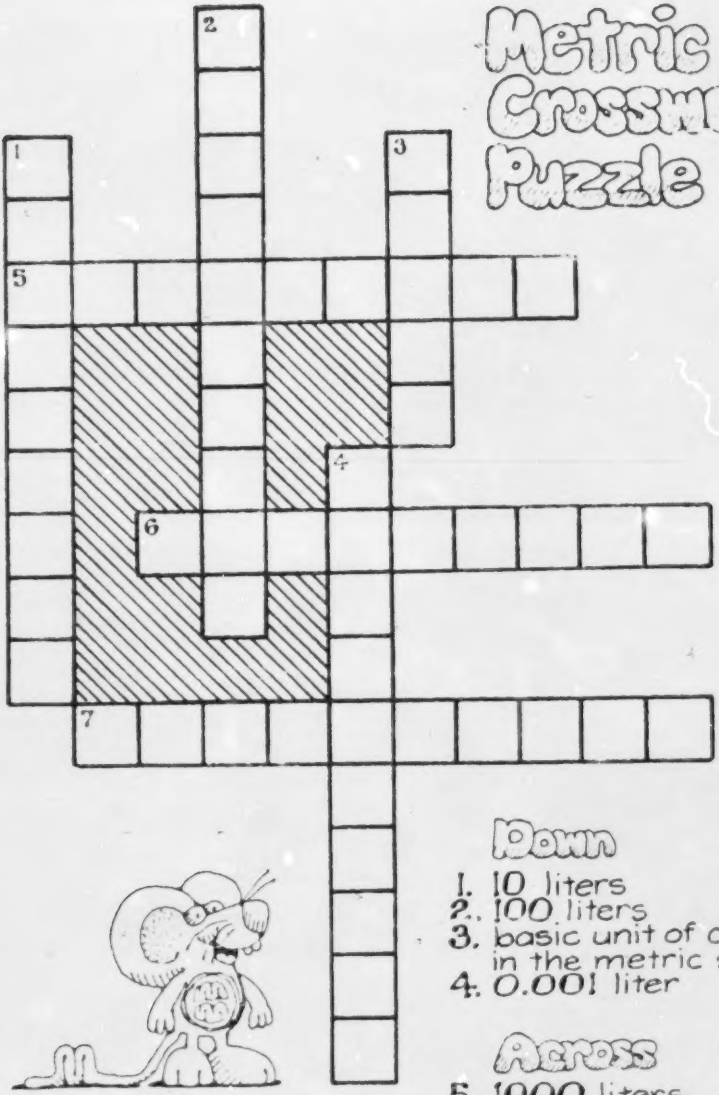


spoon milk carton tank truck

kiloliter liter milliliter

bucket small pill bottle swimming pool

Metric Crossword Puzzle



Down

1. 10 liters
2. 100 liters
3. basic unit of capacity in the metric system
4. 0.001 liter

Across

5. 1000 liters
6. 0.1 liter
7. 0.01 liter

Cut out these six flashcards. Then practice with a friend. Show him each prefix and have him tell you its meaning. Then show him each meaning and have him tell you the correct prefix.

deci (d)	deka (da)
centi (c)	hecto (h)
milli (m)	kilo (k)

10

0.1

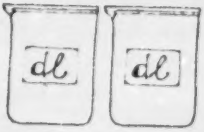
100

0.01

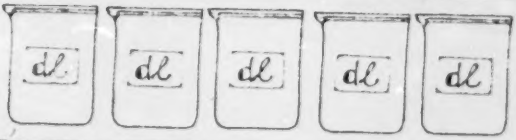
1000

0.001

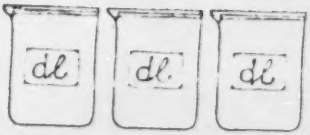
Write the correct decimal.


dl
dl

0.2 l


dl
dl
dl
dl
dl

_____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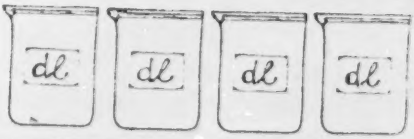
dl
dl
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dl

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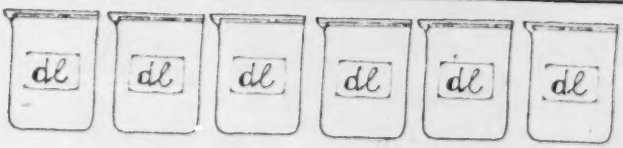
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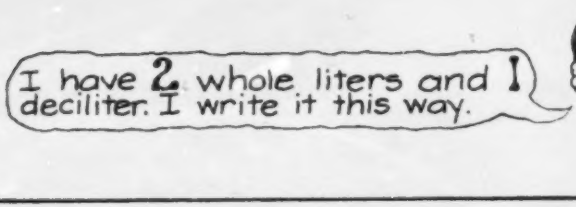
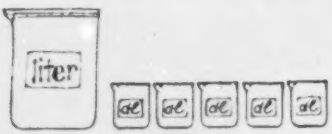
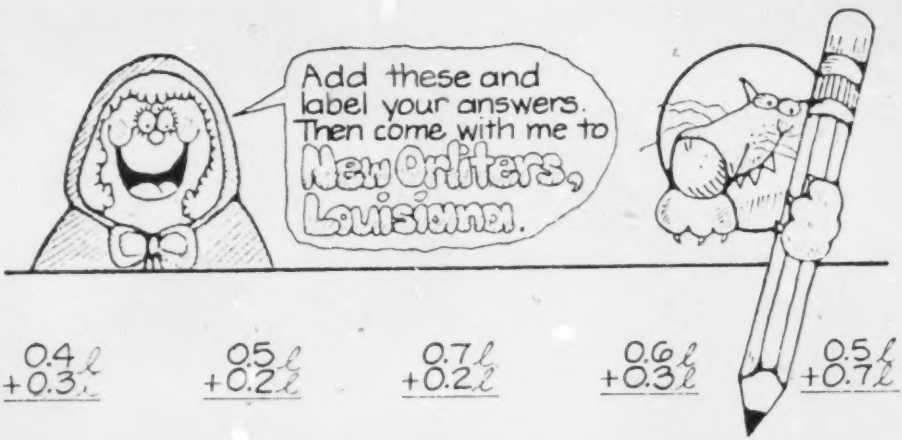


liters | deciliters

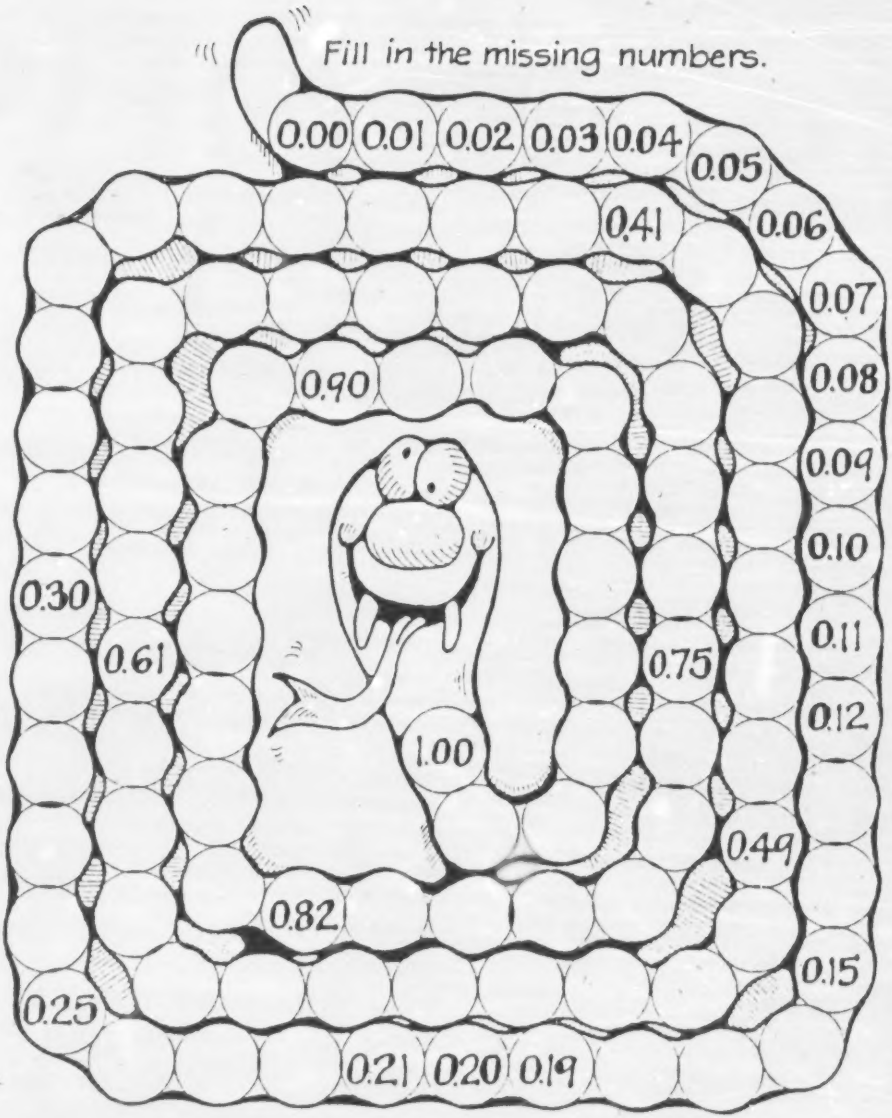
2.1 ℓ





$0.4\ell + 0.3\ell$	$0.5\ell + 0.2\ell$	$0.7\ell + 0.2\ell$	$0.6\ell + 0.3\ell$	$0.5\ell + 0.7\ell$
$0.9\ell + 0.6\ell$	$0.4\ell + 0.7\ell$	$0.6\ell + 0.7\ell$	$0.2\ell + 0.8\ell$	$1.3\ell + 0.6\ell$
$0.3\ell + 1.4\ell$	$1.2\ell + 3.6\ell$	$2.7\ell + 7.2\ell$	$8.9\ell + 5.5\ell$	$7.9\ell + 5.2\ell$
$21.1\ell + 16.4\ell$	$18.3\ell + 23.7\ell$	$29.4\ell + 56.9\ell$	$66.6\ell + 24.5\ell$	$47.8\ell + 24.2\ell$
$38.5\ell + 19.8\ell$	$72.9\ell + 48.6\ell$	$58.3\ell + 75.9\ell$	$26.8\ell + 97.8\ell$	$16.9\ell + 88.8\ell$

$3.4\ell - 1.7\ell$	$3.3\ell - 1.8\ell$	$4.1\ell - 2.8\ell$	$5.5\ell - 3.8\ell$	$7.2\ell - 4.6\ell$
$8.1\ell - 5.3\ell$	$3.0\ell - 2.9\ell$	$4.0\ell - 3.9\ell$	$6.0\ell - 2.4\ell$	$7.0\ell - 6.3\ell$
$28.2\ell - 2.6\ell$	$32.8\ell - 1.9\ell$	$64.3\ell - 3.6\ell$	$45.1\ell - 8.5\ell$	$15.8\ell - 7.9\ell$
$58.7\ell - 3.8\ell$	$85.2\ell - 4.4\ell$	$47.2\ell - 8.7\ell$	$53.5\ell - 6.9\ell$	$82.7\ell - 6.9\ell$
$657.3\ell - 567.5\ell$	$426.1\ell - 336.9\ell$	$351.0\ell - 253.5\ell$	$206.1\ell - 119.2\ell$	$100.0\ell - 0.4\ell$


Fill in the missing numbers.
0.00
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0.10
0.11
0.12
0.15
0.19
0.20
0.21
0.25
0.30
0.41
0.49
0.61
0.75
0.82
0.90
1.00

Write the correct decimal.

dℓ dℓ dℓ dℓ dℓ

0.23 ℓ

dℓ dℓ dℓ dℓ dℓ dℓ dℓ

_____

dℓ dℓ dℓ dℓ dℓ dℓ

_____

dℓ dℓ dℓ dℓ dℓ dℓ

_____

dℓ dℓ dℓ dℓ dℓ dℓ dℓ

_____

dℓ dℓ dℓ dℓ dℓ dℓ dℓ dℓ dℓ dℓ

_____

I have 1 whole liter, 2 deciliters and 3 centiliters. I write it this way.

1.23 ℓ

liters
deciliters
centiliters

Liter

dℓ dℓ

cℓ cℓ cℓ

Liter Liter

dℓ dℓ dℓ

cℓ

Liter Liter Liter

dℓ

cℓ cℓ

Liter

dℓ dℓ dℓ

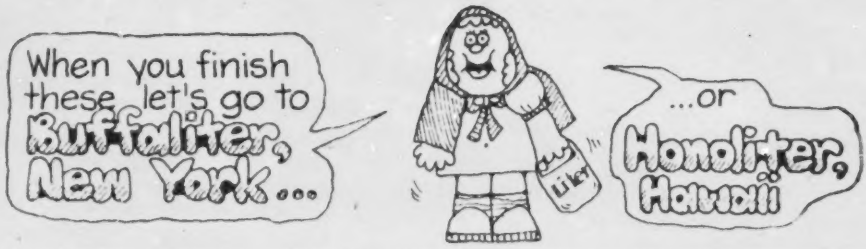
dℓ dℓ dℓ

cℓ cℓ cℓ cℓ

cℓ cℓ cℓ cℓ

Try these goodies. Just add as usual, then bring down the decimal and label your answers.

0.06ℓ +0.02ℓ	0.04ℓ +0.03ℓ	0.05ℓ +0.03ℓ	0.05ℓ +0.05ℓ	0.07ℓ +0.08ℓ
0.09ℓ +0.09ℓ	0.06ℓ +0.07ℓ	0.17ℓ +0.21ℓ	0.13ℓ +0.32ℓ	0.26ℓ +0.43ℓ
0.31ℓ +0.56ℓ	0.82ℓ +0.15ℓ	0.07ℓ +0.92ℓ	0.38ℓ +0.26ℓ	0.47ℓ +0.47ℓ
0.28ℓ +0.27ℓ	0.56ℓ +0.39ℓ	0.75ℓ +0.15ℓ	0.26ℓ +0.46ℓ	0.72ℓ +0.18ℓ
0.29ℓ +0.91ℓ	0.37ℓ +0.69ℓ	0.46ℓ +0.88ℓ	0.52ℓ +0.69ℓ	0.37ℓ +0.85ℓ
83.62ℓ +36.33ℓ	84.13ℓ + 5.74ℓ	72.56ℓ + 6.13ℓ	821.03ℓ +13.90ℓ	600ℓ +40.99ℓ



$0.09\ell - 0.05\ell$	$0.07\ell - 0.02\ell$	$0.08\ell - 0.04\ell$	$0.06\ell - 0.03\ell$	$0.05\ell - 0.04\ell$
$0.12\ell - 0.06\ell$	$0.14\ell - 0.07\ell$	$0.15\ell - 0.09\ell$	$0.17\ell - 0.08\ell$	$0.13\ell - 0.05\ell$
$8.69\ell - 2.48\ell$	$9.45\ell - 7.43\ell$	$7.88\ell - 5.74\ell$	$6.53\ell - 6.12\ell$	$3.98\ell - 1.45\ell$
$0.58\ell - 0.39\ell$	$0.32\ell - 0.16\ell$	$0.50\ell - 0.25\ell$	$6.31\ell - 2.47\ell$	$8.48\ell - 5.69\ell$
$20.47\ell - 11.89\ell$	$30.51\ell - 17.73\ell$	$97.46\ell - 73.13\ell$	$86.32\ell - 70.20\ell$	$45.98\ell - 20.03\ell$
$520.69\ell - 200.32\ell$	$489.07\ell - 462.07\ell$	$697.48\ell - 144.20\ell$	$356.01\ell - 356.00\ell$	

I'm Grammy Davis, Jr. here to present the metric units of mass. The most commonly used ones are the gram, kilogram, and milligram. Discuss the chart with your classmates then copy it below. Don't forget the symbols.

1000	kilogram (kg)
100	hectogram (hg)
10	dekagram (dag)
1	gram (g)
0.1	decigram (dg)
0.01	centigram (cg)
0.001	milligram (mg)

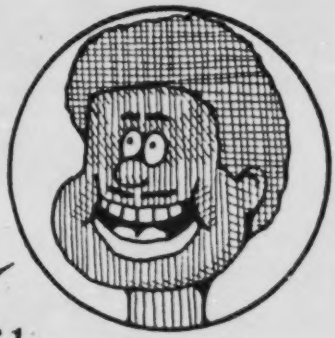
		( )
		( )
		( )
		( )
		( )
		( )
	60	( )

GRAM

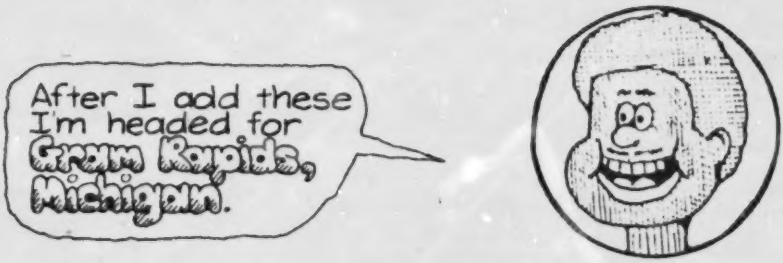
dg

cg

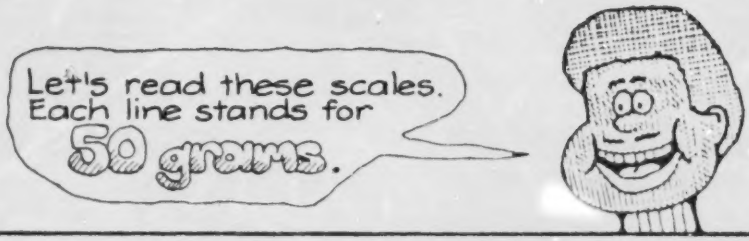
mg

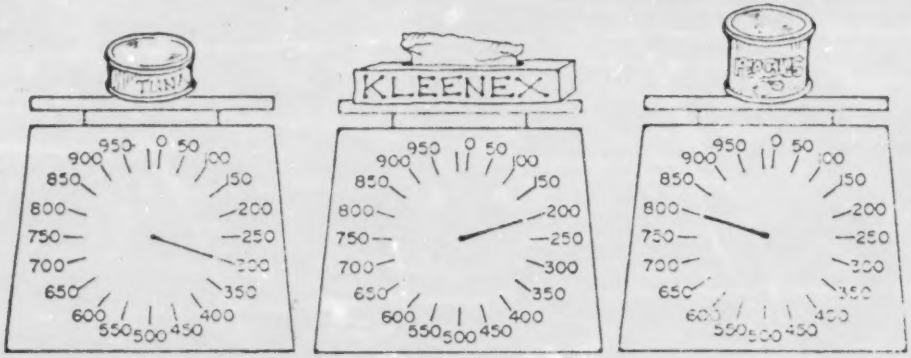

Carefully cut out each of these four rectangles. Hold each one in your hand to feel the approximate mass of a gram, a decigram, a centigram, and a milligram.

61

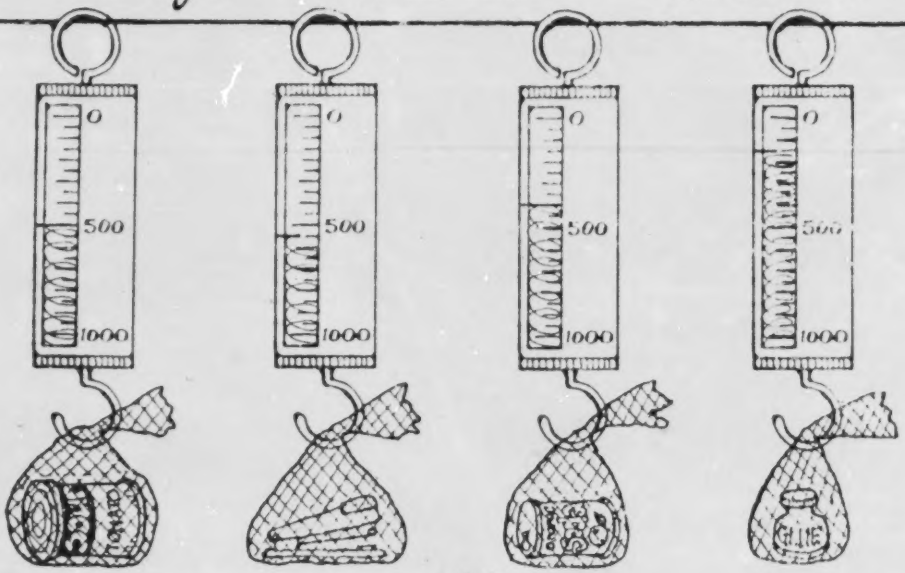


$\begin{array}{r} 68\text{g} \\ +31\text{g} \\ \hline 99\text{g} \end{array}$	$\begin{array}{r} 41\text{g} \\ +37\text{g} \end{array}$	$\begin{array}{r} 76\text{g} \\ +22\text{g} \end{array}$	$\begin{array}{r} 55\text{g} \\ +14\text{g} \end{array}$	$\begin{array}{r} 37\text{g} \\ +52\text{g} \end{array}$
$\begin{array}{r} 263\text{g} \\ +124\text{g} \end{array}$	$\begin{array}{r} 390\text{g} \\ +207\text{g} \end{array}$	$\begin{array}{r} 468\text{g} \\ +327\text{g} \end{array}$	$\begin{array}{r} 539\text{g} \\ +328\text{g} \end{array}$	$\begin{array}{r} 608\text{g} \\ +522\text{g} \end{array}$
$\begin{array}{r} 487\text{g} \\ +634\text{g} \end{array}$	$\begin{array}{r} 275\text{g} \\ +835\text{g} \end{array}$	$\begin{array}{r} 349\text{g} \\ +289\text{g} \end{array}$	$\begin{array}{r} 206\text{g} \\ +\ 6\text{g} \end{array}$	$\begin{array}{r} 999\text{g} \\ +100\text{g} \end{array}$
$\begin{array}{r} 384\text{g} \\ +616\text{g} \end{array}$	$\begin{array}{r} 287\text{g} \\ +\ 13\text{g} \end{array}$	$\begin{array}{r} 542\text{g} \\ +\ 58\text{g} \end{array}$	$\begin{array}{r} 500\text{g} \\ +500\text{g} \end{array}$	$\begin{array}{r} 450\text{g} \\ +550\text{g} \end{array}$
$\begin{array}{r} 1028\text{g} \\ +2938\text{g} \end{array}$	$\begin{array}{r} 3620\text{g} \\ +\ 1430\text{g} \end{array}$	$\begin{array}{r} 9862\text{g} \\ +\ \ 73\text{g} \end{array}$	$\begin{array}{r} 1764\text{g} \\ +\ 889\text{g} \end{array}$	$\begin{array}{r} 5482\text{g} \\ +\ 988\text{g} \end{array}$


Let's read these scales.
Each line stands for
50 grams.


TUNA
KLEENEX
950
900
850
800
750
700
650
600
550
500
450
0
50
100
150
200
250
300
350
400

300g


0
500
1000
SUGAR
FLOUR
RICE

63

60

stapler about _____ g

small book about _____ g.

can of soup about _____ g

Which unit should you use? Draw lines to connect the object to the most appropriate unit for measuring its mass.

---

ant

can of soup

car

kilogram

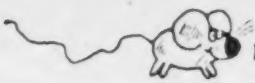
gram

milligram

---

person

vitamin C



mouse

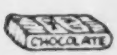
kilogram

gram

milligram

---

bee's wing



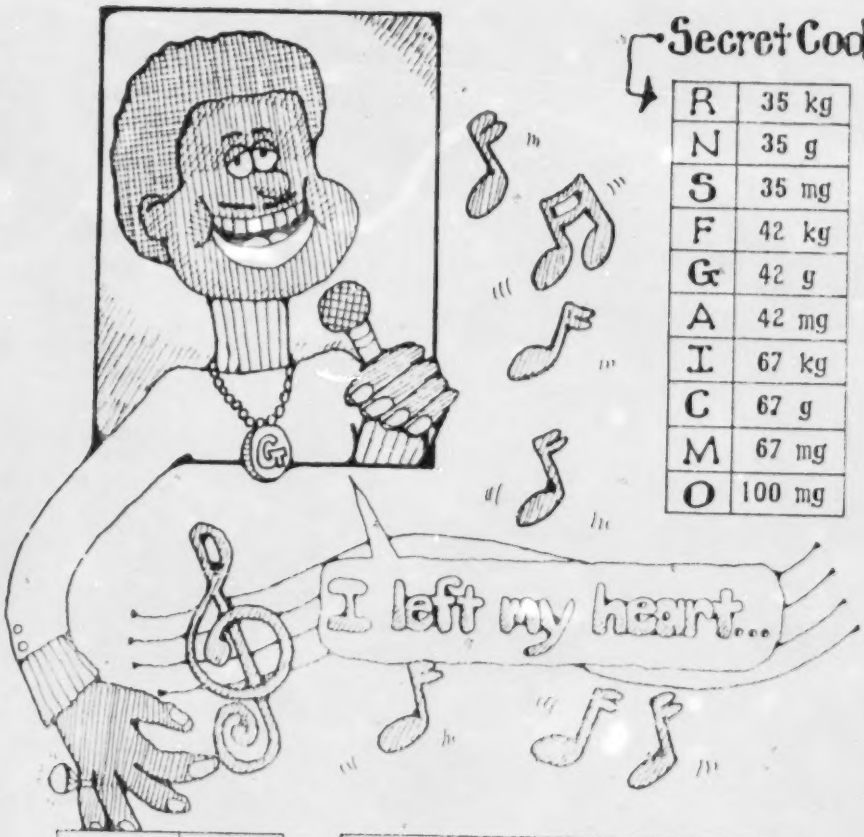
candy bar

sack of rice

kilogram

gram

milligram



Secret Code

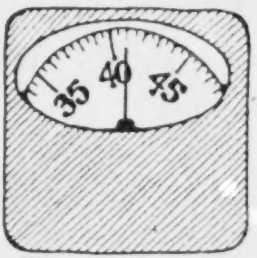
R	35 kg
N	35 g
S	35 mg
F	42 kg
G	42 g
A	42 mg
I	67 kg
C	67 g
M	67 mg
O	100 mg

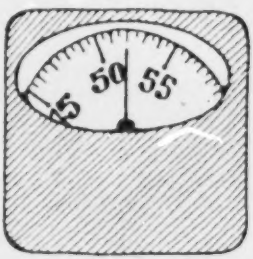
I	
34 kg +33 kg	50 g -15 g
67 kg	

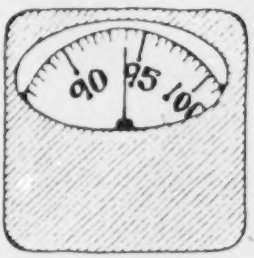
21 g +21 g	17 kg +18 kg	66 mg -24 mg	90 mg -23 mg

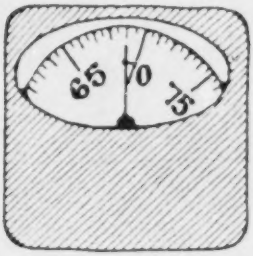
36 kg + 6 kg	26 kg + 9 kg	81 mg -39 mg	70 g -35 g	28 g +39 g	60 kg + 7 kg	99 mg -64 mg	89 g -22 g	73 mg +27 mg

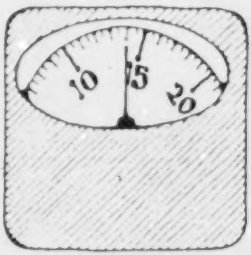
Read these scales in kilograms.

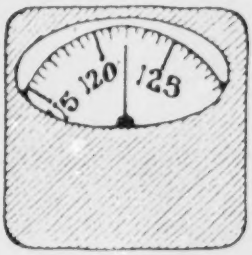


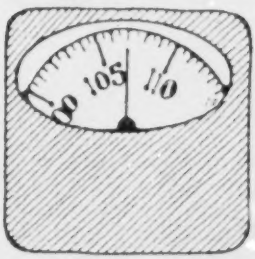


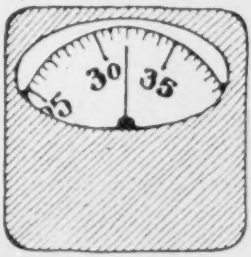


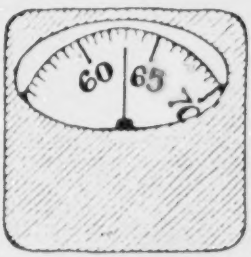


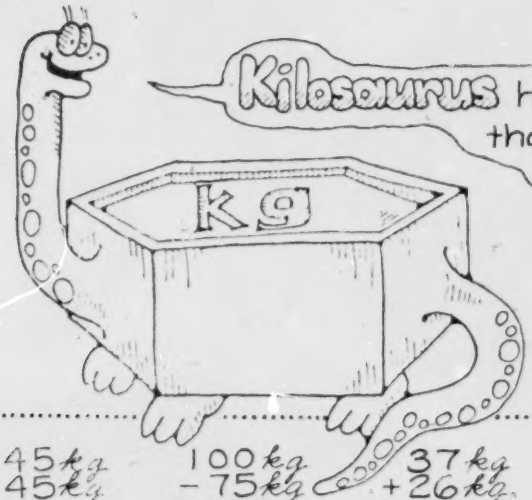










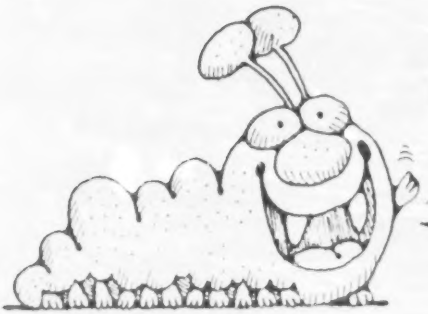


Kilosaurus here to remind you that the kilogram is 1000 grams. Add and subtract these kilograms.

45 kg +45 kg 90 kg	100 kg −75 kg	37 kg +26 kg	84 kg −37 kg	35 kg +35 kg
150 kg −75 kg	17 kg +17 kg	75 kg −25 kg	42 kg +38 kg	50 kg +50 kg
60 kg −48 kg	49 kg +49 kg	72 kg −36 kg	23 kg +37 kg	90 kg −45 kg
27 kg +28 kg	56 kg −28 kg	98 kg +25 kg	48 kg +19 kg	81 kg −58 kg

Find your own mass in kilograms.

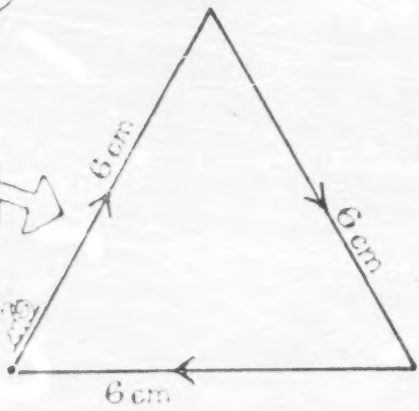
I weigh about _____ kilograms.



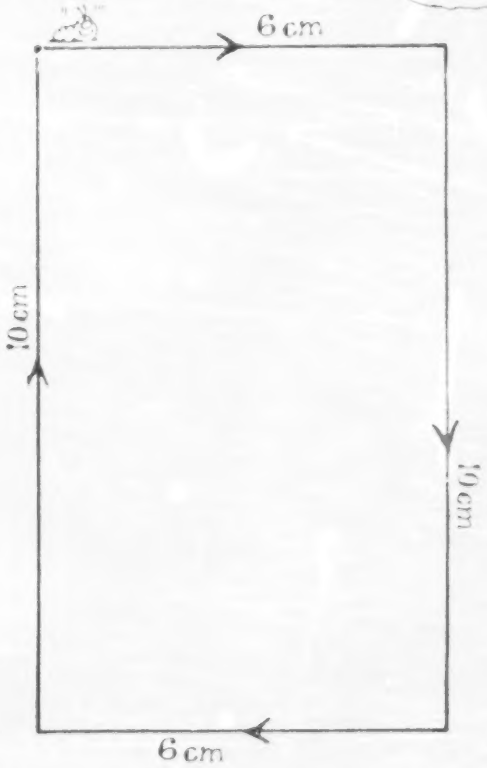
Hi! I'm Centipete, here to teach you about perimeter.

How far does Centipete go to get completely around each figure?

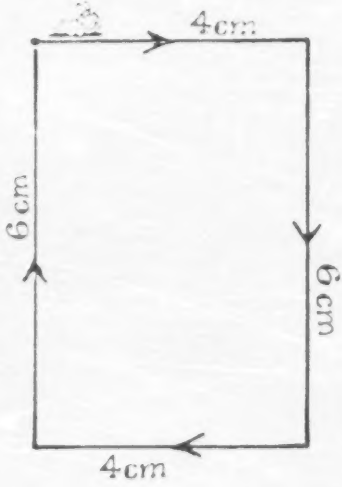
$$\begin{array}{r} 6 \\ 6 \\ +\,6 \\ \hline 18 \end{array}$$



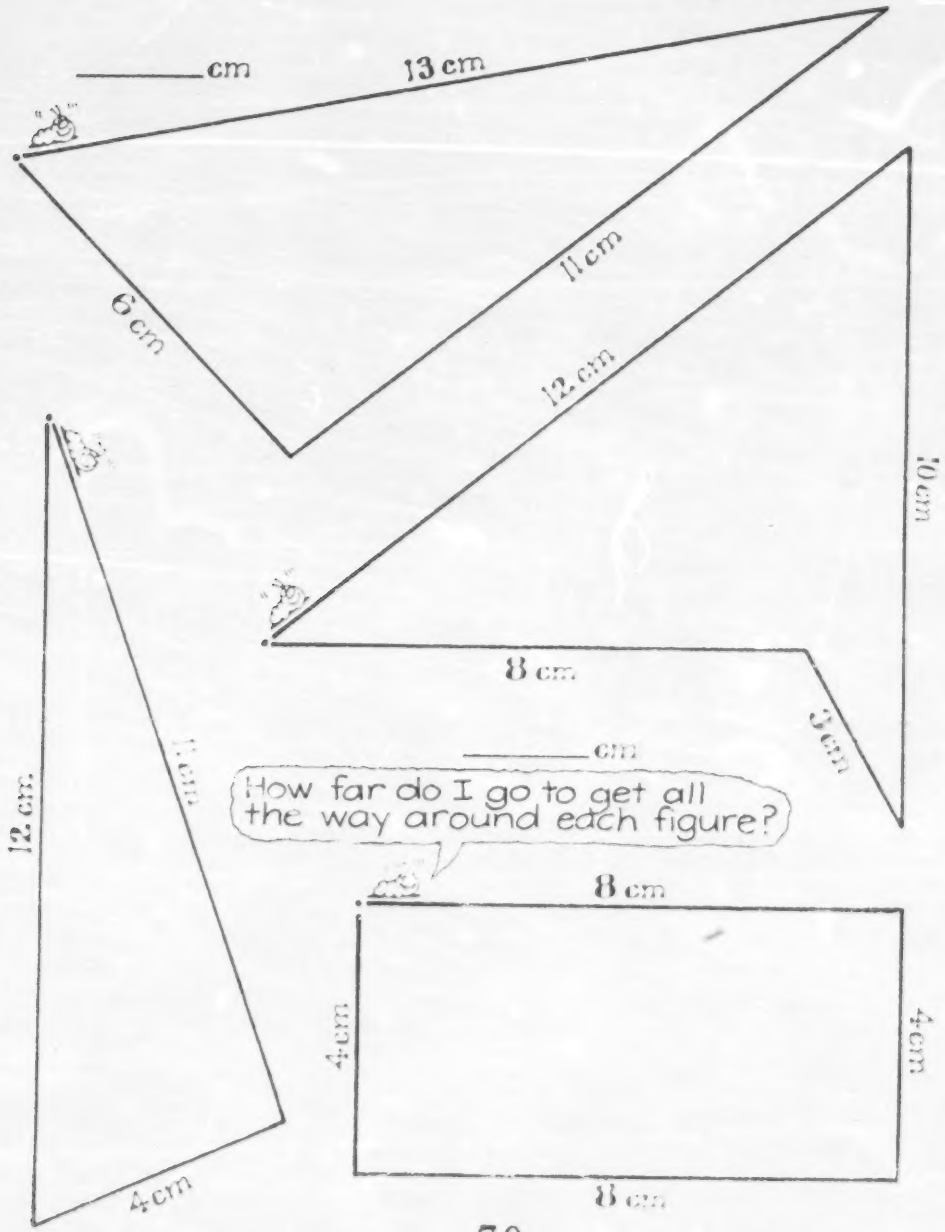
_____ cm

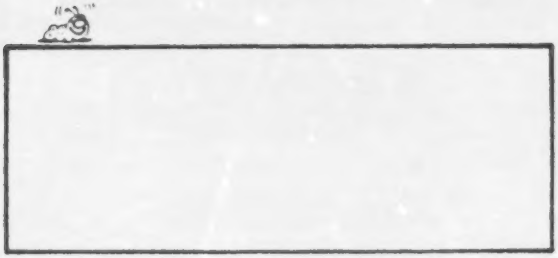


_____ cm

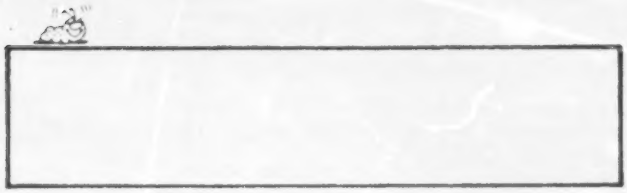


_____ cm


_____ cm
13 cm
6 cm
11 cm
12 cm
10 cm
8 cm
3 cm
_____ cm
How far do I go to get all the way around each figure?
12 cm
11 cm
4 cm
8 cm
4 cm
4 cm
8 cm
_____ cm
_____ cm



_____ cm



_____ cm

_____ cm

Use your ruler to find how far I go.

_____ cm

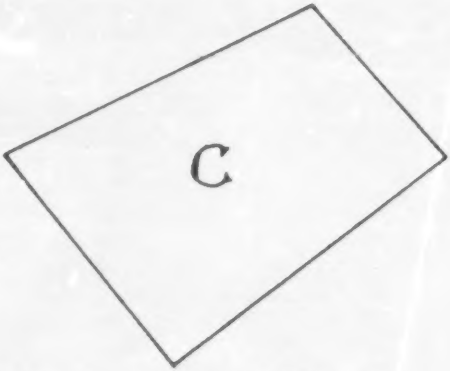
The distance around a figure is called its **perimeter**.

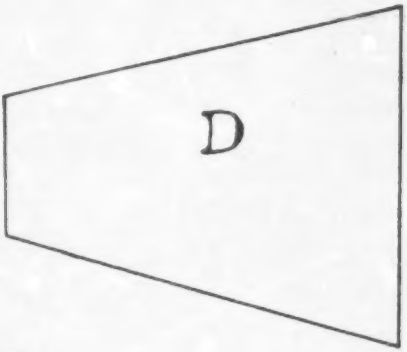
Measure the perimeter of A. _____cm

Measure the perimeter of B. _____cm

Which has the greater perimeter? _____

How much greater? _____cm

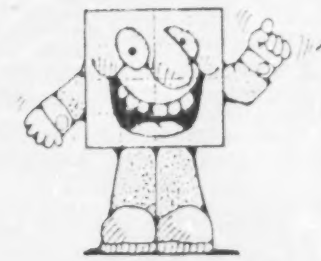


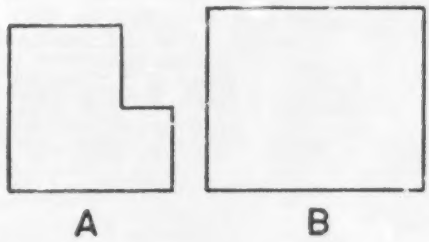


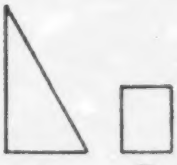
Perimeter of C = _____cm

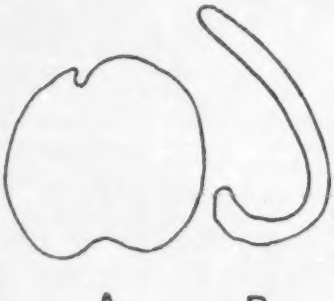
Perimeter of D = _____cm

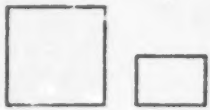
The perimeter of _____ is _____cm longer than the perimeter of _____.

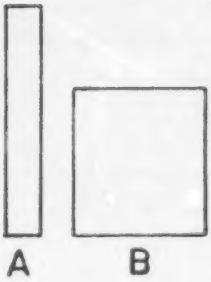

Hi! I'm here to teach you about area. My name is Aristotle Aw. My friends call me Ari for short. For each pair of shapes here, mark the one with the greater area.

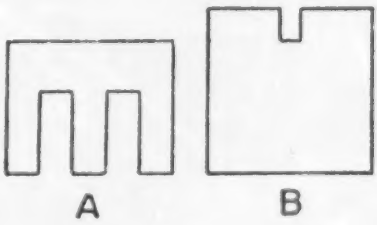

A
B

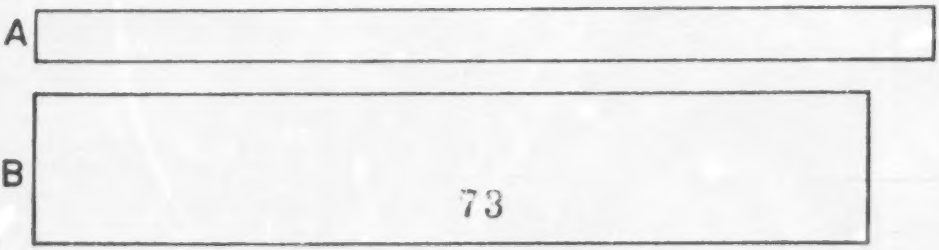

A
B

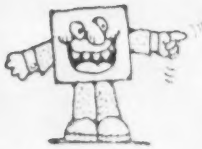

A
B


A
B


A
B


A
B


A
B
73



Which shape has the most area? Cut out shape **B** to see if it is larger than shape **A**.

A

B

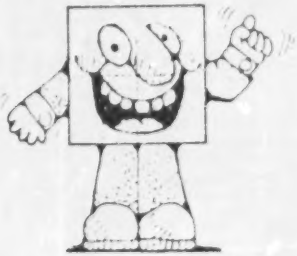
A

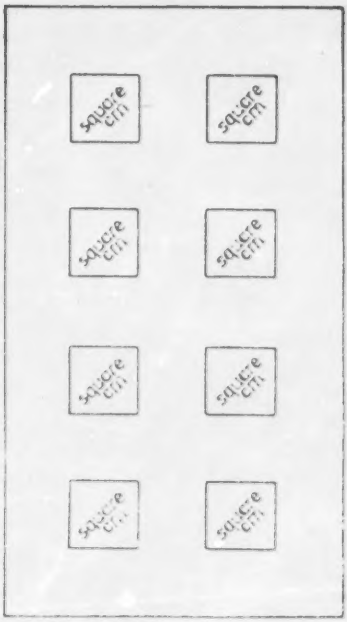
B

A

B

The metric unit **square centimeter** is used to measure area. Cut out these square centimeters. Use them to cover each rectangle to find its area.





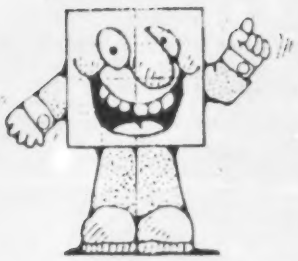
_____ square centimeters

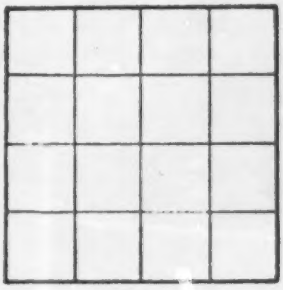
_____ square centimeters

_____ square centimeters

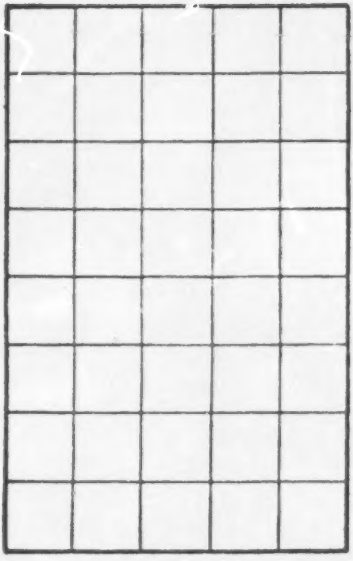
_____ square centimeters

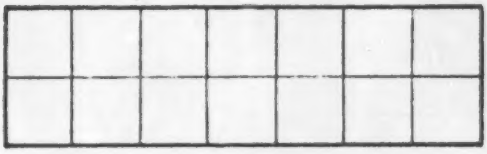
Ari has already put square centimeters on these rectangles. Find the areas from the pictures.



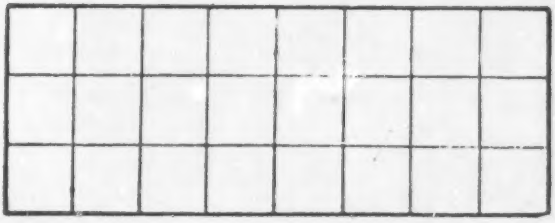


_____square cm



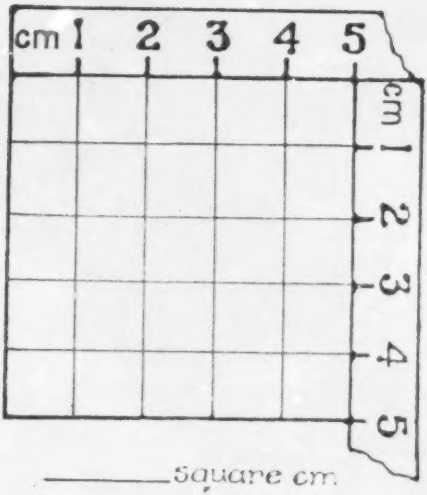


_____square cm

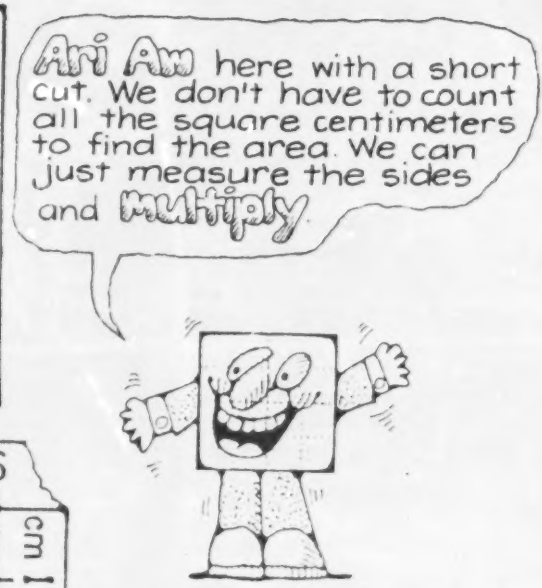


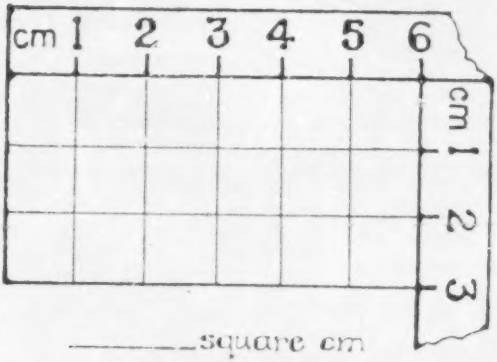
_____square cm

_____square cm

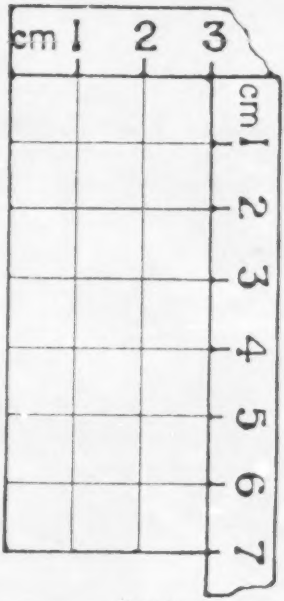


_____ square cm

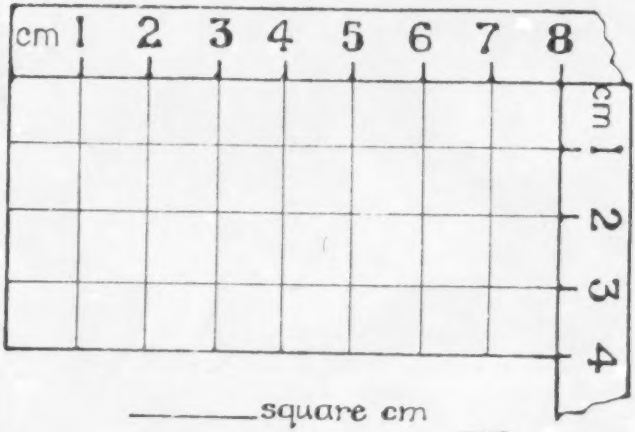

Ari Am here with a short cut. We don't have to count all the square centimeters to find the area. We can just measure the sides and multiply.



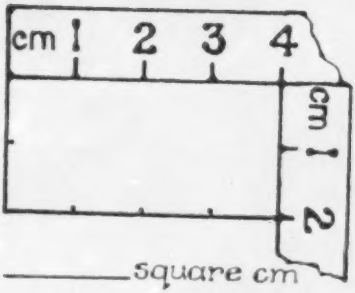
_____ square cm



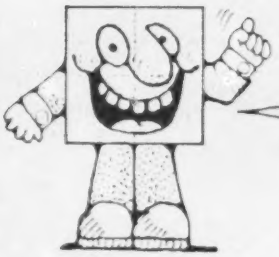
_____ square cm



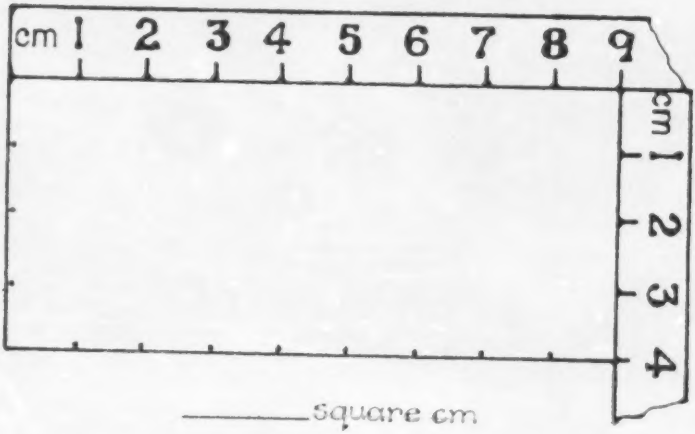
_____ square cm



_____ square cm

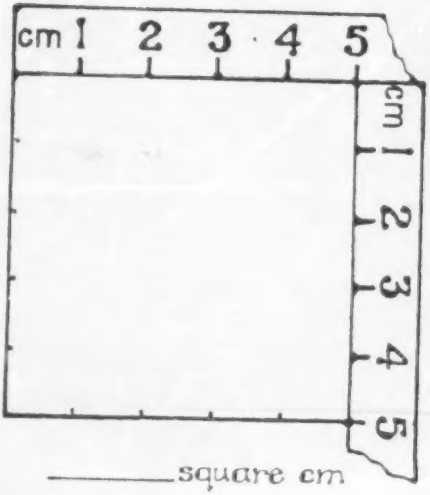


Use the short cut to find these areas.

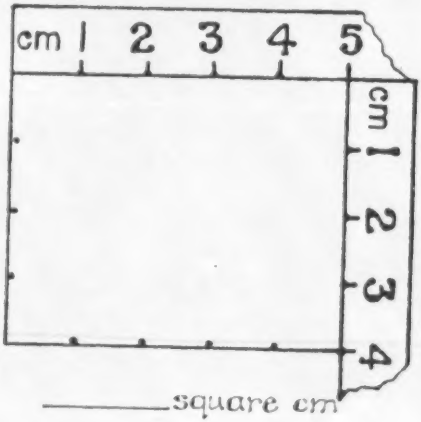


_____ square cm

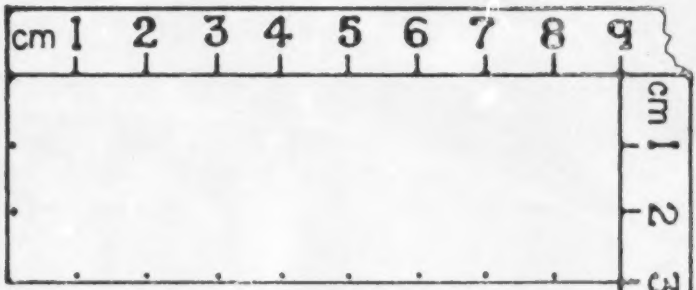
To check your answers, connect the dots and ruler lines to make square centimeters. Then count.



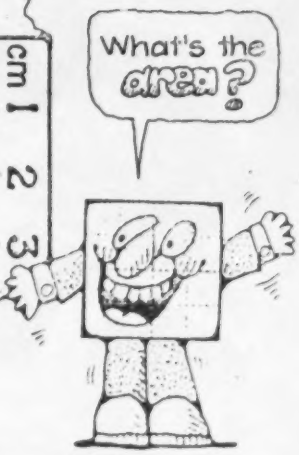
_____ square cm

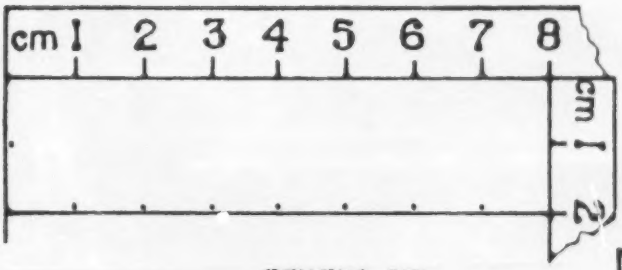


_____ square cm

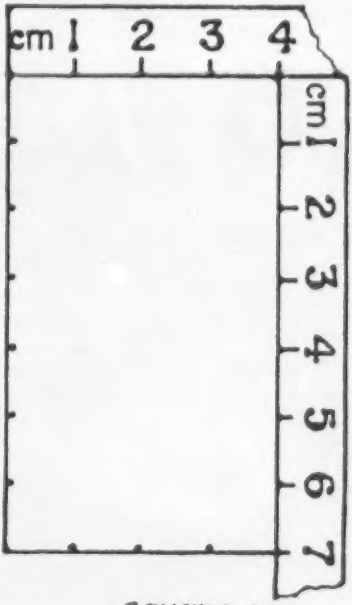


_____square cm

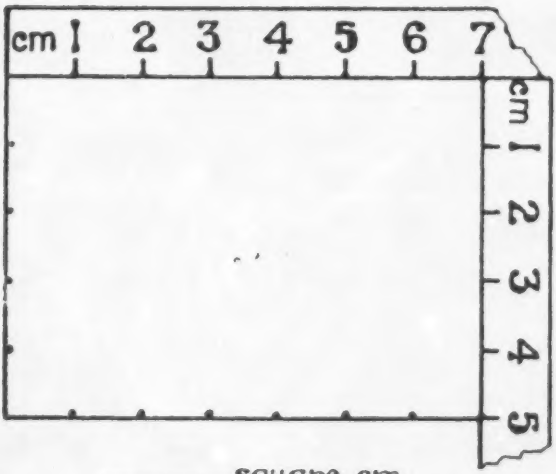




_____square cm

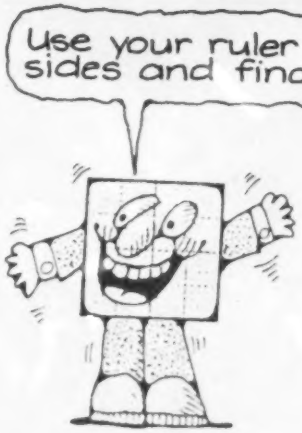


_____square cm



_____square cm

77



_____ square cm

_____ square cm

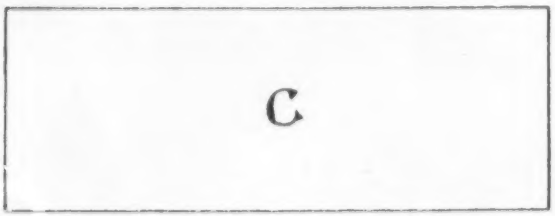
_____ square cm

_____ square cm

Area of A = _____ square cm

Area of B = _____ square cm

The area of ____ is _____ square cm greater than the area of _____.



Area of C = _____ square cm

Area of D = _____ square cm

The area of ____ is _____ square cm greater than the area of _____.

Secret Code

G	25 square cm
A	25 square dm
I	25 square m
R	34 square cm
S	34 square dm
H	34 square m
Y	79 square cm
E	79 square dm
T	79 square m

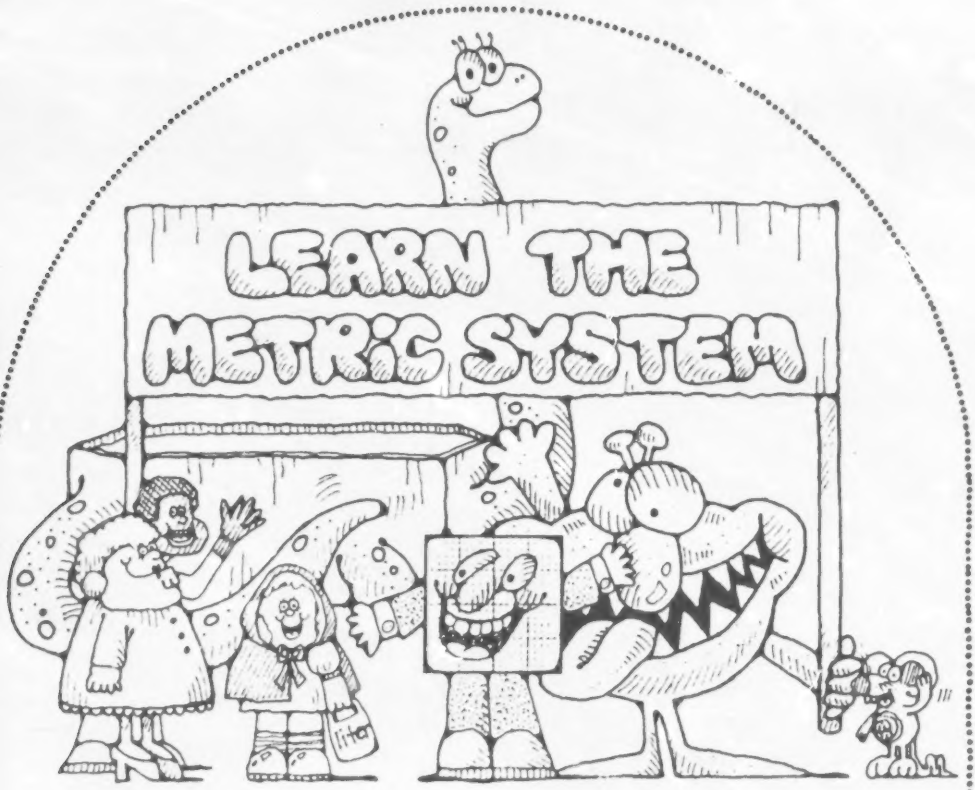
A		
13 square dm +12 square dm	17 square cm +17 square cm	50 square m -25 square m
25 square dm		

37 square cm -12 square cm	34 square dm +45 square	90 square m -11 square m	70 square dm -36 square dm

50 square m -16 square m	14 square dm +11 square dm	20 square m + 5 square m	76 square cm -42 square cm	46 square cm +33 square cm

Signature du

83



1000	kilometer (km)	kiloliter (kl)	kilogram (kg)
100	hectometer (hm)	hectoliter (hl)	hectogram (hg)
10	dekameter (dam)	dekaliter (dal)	dekagram (dag)
1	meter (m)	liter (l)	gram (g)
0.1	decimeter (dm)	deciliter (dl)	decigram (dg)
0.01	centimeter (cm)	centiliter (cl)	centigram (cg)
0.001	millimeter (mm)	milliliter (ml)	milligram (mg)